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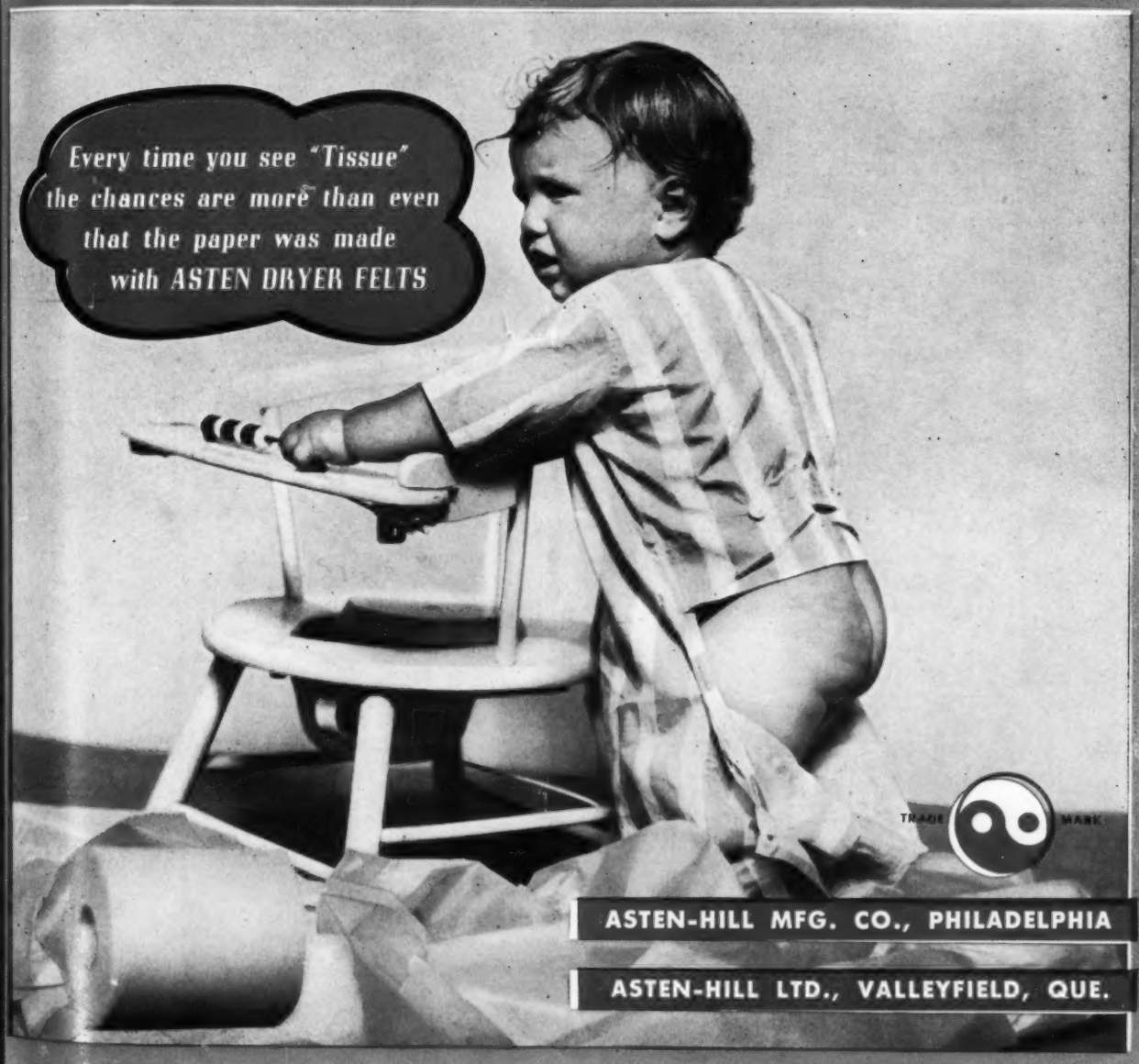
PAPER TRADE JOURNAL

VOL. 122 NO. 24 JUNE 13, 1946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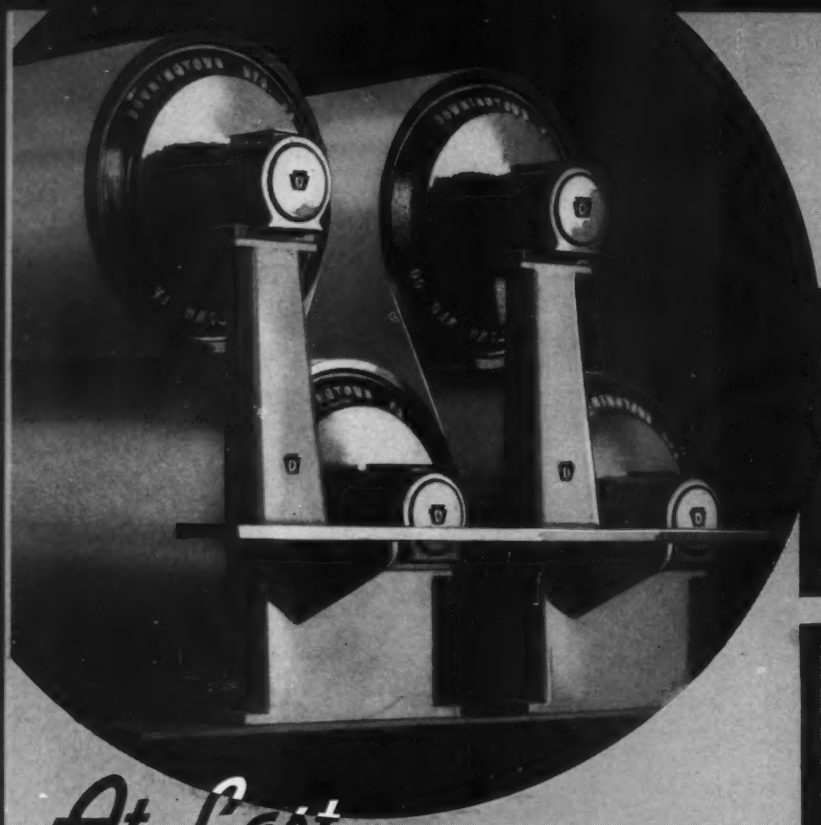
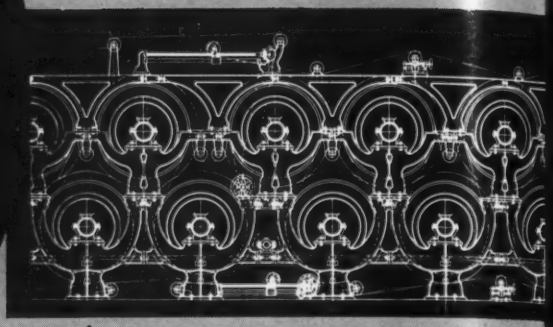
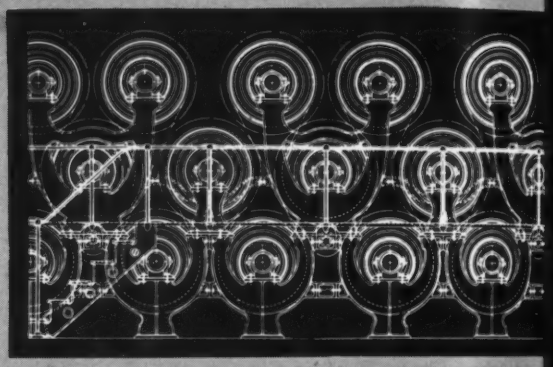
OPA Lifts Ceiling on Groundwood Specialty Paper
Paper and Twine Trade Gathers at Wawasee
Differential Remains on Baled Waste
Mahler Tells of Visit to Russia

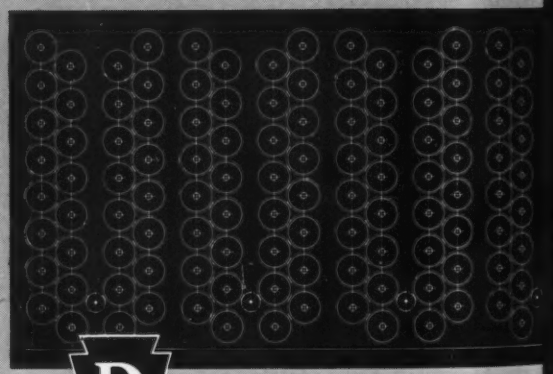
Washington Establishes Formula for Peeled Pulp
William A. Whitcomb Is Killed in His Office
Consolidated Proposed to Build Housing
Holyoke Votes Flood Wall Bonds



Drawings below illustrate, top to bottom, conventional designs of Downingtown Two Deck, Three Deck, and Vertical Dryers.







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Paper Making Machinery

PAPER TRADE JOURNAL

Title Reg. U. S. Pat. Off.
Established 1872

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PAPER TRADE JOURNAL
Vol. 122, No. 24 June 13, 1946
Title Reg. U. S. Pat. Off.

William A. Whitcomb Killed in His Office

WILLIAM A. WHITCOMB

BOSTON—William A. Whitcomb, 73, president of the Great Northern Paper Company, was shot dead in his eighth - floor office at 201 Devonshire St. just before 11 A. M. on Monday by a man who had represented himself to be a Treasury Department agent to gain access to his office.

While police were gathering clues and seeking to establish a connection between the crime of Monday and a set of unsigned papers on Mr. Whitcomb's desk, an explosion in a gas-filled apartment on Tuesday in Westfield, N. J., three hundred miles away, brought the name of one George E. Hardy into the mystery. The unsigned papers were a proposed life contract of employment between the Great Northern company and Hardy, and a photograph of the dead man in New Jersey was identified as resembling the visitor in Boston.

Mr. Whitcomb was born in Clinton, Ind., Jan. 18, 1873, the son of John and Lydia Amelia (Parks) Whitcomb. He was graduated from DePauw University in 1894 and from Sheffield Scientific School at Yale the following year.

He was mill superintendent at the Glens Falls Paper Mill Company, Glens Falls, N. Y., in 1898, and became associated with the International Paper Company in New York that year. He became associated with the Great Northern Paper Company in 1910 and became president in 1928.

The Great Northern Paper Company chiefly manufactures newsprint and during NRA days Mr. Whitcomb was called to Washington to help establish price and production controls for the newsprint industry.

The Whitcombs were married in 1903. Mrs. Whitcomb, the former Grace M. Merrall, survives, as do their family, John and William, sons, and Merle, a daughter.

OPA Lifts Ceiling by $8 on Groundwood Specialty Papers

WASHINGTON, D. C. — Manufacturers' ceiling prices for groundwood specialty papers have been increased $8 a ton, the Office of Price Administration announced today.

The increase, effective June 15, 1946, is granted to cover increased labor and raw material costs. Recent wage increases account for most of the higher costs.

Unless ceiling prices are raised, OPA said, continued production of groundwood specialty papers will be threatened. In the event of supply being curtailed, consumers, who are magazine publishers and converters, would have to buy substitute papers which have prices above the new ceilings now established for groundwood papers.

Today's action does not change the ceiling prices of converters on their finished products, OPA said. Magazines are exempt from price control.

Approximately 500,000 tons of groundwood specialty papers are produced annually. Today's increase, therefore, means an added annual return to industry of about $4,000,000.

The new ceilings range from $4.30 to $6.15 per hundredweight, f.o.b. mill.

West Coast Newspapers Buy Cascade Mill

TACOMA — Purchase of the former Cascade Paper Company mill on Chambers creek in Tacoma from the Everett Pulp and Paper Company, was announced Tuesday by the West Tacoma Newsprint Company.

The new concern is owned by a group of west coast newspapers who intend immediately to convert the mill to the production of newsprint paper, using for the most part hemlock wood in cooperation with local suppliers as the raw material for groundwood pulp.

Representatives of the participating west coast newspapers who met in Tacoma last week inspected the mill and closed final details for its purchase, the price for which it is understood was in excess of $1,000,000. The new company will spend several hundred thousand dollars revising and modernizing the mill for newsprint production. The plant has been idle for the past nine years. Production of 50 tons per day is anticipated within six months, but a still larger output is planned when equipment now being ordered can be delivered.

Gair Woodlands Acquires 10,000 Acre Timber Tract

SAVANNAH, Ga. — Southern Paperboard Corporation is going forward with plans for an early start on its big paper mill at Port Wentworth. Application for permission to do dredging and dock work at the plant site on the Savannah river was filed with the United States district engineer's office by Anderson, Connerat, Dunn and Hunter, attorneys for the mill. All material from the dredging will be deposited on the company's property, the application stated. The dock will be constructed of sheet piling.

Another interesting development was the closing of a transaction in which Gair Woodlands, a subsidiary of the mill, acquired more than 10,000 acres of timber land in Appling and Jeff Davis counties.

Olin T. McIntosh, Sr., Savannah, and the Southern States Naval Stores Company sold the two big tracts to Gair for an estimated $220,000.

OPA Rejects Request for Rise in Newsprint Prices

WASHINGTON — The Office of Price Administration this week rejected a request for an increase in newsprint ceiling prices, but told producers that it would consider any data they submitted as evidence of hardship.

The agency, while refusing to authorize a rise in prices, said it would be willing to review information the industry might file in support of contentions that rising material and labor costs justify an increase.

Pacific Coast Pulp and Paper Mills Raise Wages

San Francisco—Under an agreement reached at the annual wage conference of the Pacific Coast pulp and paper industry, male workers will receive an increase of 4 per cent, raising their base pay to $1.09 an hour. Base pay of women will be increased 6 per cent to 90½ cents an hour.

The agreement covers 33 plants in Oregon, Washington and California.

Consolidated Offers To Build Houses

WISCONSIN RAPIDS, Wis. — A plan for erection of 20 houses grouped at right angles on two streets was presented to the common council last week by the Consolidated Water Power and Paper Company, in order to relieve the critical housing shortage faced by a number of its employees. Early extension of sewer and water service was requested in order to facilitate construction. The matter was referred to a committee, with Mayor William T. Nobles promising a special meeting of the council later this month if necessary in order to expedite the project.

A letter from Ralph Cole, company secretary, explained that the company is "greatly handicapped in the expansion of our business because of the housing shortage." Mr. Cole also pointed out that due to the shortage of skilled craftsmen in the building trade it would be necessary that these houses be prefabricated in a shop and that economical construction required building in groups.

Consolidated offered to prepare the necessary excavation and backfill at its own expense. The city would install the pipe and equipment without special assessments. It was asked to procure the materials and complete the project by October 1, the date when the houses would be ready for occupancy, or permit the company to secure the materials through its sources of supply at prices satisfactory to the city.

Alderman Fred Eberhardt said that the company was in need of several highly technical men and that several qualified applicants had appeared but that they had not stayed for lack of housing facilities. He called the situation "A truly serious problem for the company."

Warrensburg Pulp Co. Will Erect Building

WARRENSBURG, N. Y. — The owners of the Warrenburg Pulp and Paper Co. have let a contract for the construction of a second building to house another paper making machine. Work on the building, which will be built of steel and brick, is expected to start at an early date as the company has considerable work on hand for the Fall and Winter season.

Tissue Mills Plant Force Considers a Strike

HOLYOKE, Mass.—Unionized paper-manufacturing employees of the two mills of American Tissue Mills are considering striking in protest over failure of the management to negotiate a new wage contract, according to a negotiating committee headed by Andrew Beaton, president of Eagle lodge of Papermakers. Beaton stated that President-Treasurer Benjamin F. Perkins of the company failed to keep an appointment to confer with union representatives on May 22. Negotiation of a tissue mills contract usually follows closely after signing of a new contract between the union and writing paper manufacturers.

Continental Can to Build New Container Plant

Continental Can Company's Paper Division will begin construction of a new paper container plant in Utica, New York, within the next two weeks, according to Carle C. Conway, chairman of the board and president. Located at Seward Avenue and French Road, the building is expected to be completed by the early summer of 1947.

As explained by J. F. Price, general manager of the Paper Division, the new factory is needed to meet the company's expanding paper conversion activities, and will be devoted exclusively to the manufacture of sanitary food containers.

Located on a 13½-acre site, which will provide room for contemplated future expansion, the building, with its 228,000 square feet of floor space, is planned to meet the manufacturing requirements of specially designed equipment now being built.

E. J. Engel, manager of the present Utica conversion plant at 2150 Erie Street, will be in charge of the new plant.

DON P. ANDERSON,
appointed advertising manager of the Fox River Paper Corporation

Fox River Paper Corp. Names Don Anderson

APPLETON, Wis. — The Fox River Paper Corporation, makers of bond, ledger and onion skin business papers, has appointed Don G. Anderson to be advertising manager. Mr. Anderson was formerly on the editorial staff of the Appleton *Post Crescent*.

Trade Turns to Wawasee For Paper-Twine Meet

CHICAGO — A large delegation of Chicago and Illinois members of the Paper and Twine Association will journey to Lake Wawasee, Indiana, next week for the June 14 and 15 meetings of the organization. As usual, the two day affair will be held at the Spink Wawasee Hotel with business sessions sandwiched in between the golf outings for which this event is famous. Friday morning business sessions will see Bert Carpenter, president of the National Paper Trade Association outlining the NPTA program for the year and the Saturday sessions will provide time for the officers to make their reports including a report on the important sales training program which, with the public relations program of the industry, represent two highlights of the current activities. The golf tournament will take the time of both afternoons with prizes awarded at the dinner following.

Included among the delegation may be five new Chicago members including S. S. Caplan, Marvin Envelope & Paper Company; E. J. McGuire and C. H. Plogman, Empire Box Corporation and John Lacy and Melvin Schneider of the Brower Paper Co.

Perkins Negotiations Are Concluded

CHICOPEE, Mass.—At a conference between representatives of the management of B. F. Perkins and Sons, Inc., makers of paper-making machinery, and the officers of the AFL federal labor union at the Willimansett plant, with U. S. Conciliator Robert E. Cosgrove, sitting in, a friendly agreement was reached on all points of the wage question. It is expected that the contract will be signed within a few days. It is understood to embody a 65-cent minimum and a substantial pay increase.

Representing the management were President J. L. Perkins, Jr., Treasurer B. F. Perkins, Vice-President George J. Bernard, General Sales Manager William Woosnam, Judge Ralph S. Spooner of Springfield and Judge Philip O'Brien.

Representing the union were Regional Organizer William F. Malone, President Ward Sullivan, Secretary Francis Lamirande, Theodore Casey, Theodore Roman, Louis Favreau and Lionel B. LaMar.

Blodgett's Daughter Graduates Magna Cum Laude

HOLYOKE, Mass. — Mrs. Livingston B. Hall, 36, mother of four children and daughter of Thomas Harper Blodgett, president and chairman of the board of directors of the American Writing Paper Corp., recently graduated magna cum laude from Radcliffe college. She is the wife of the vice-dean of Harvard Law School.

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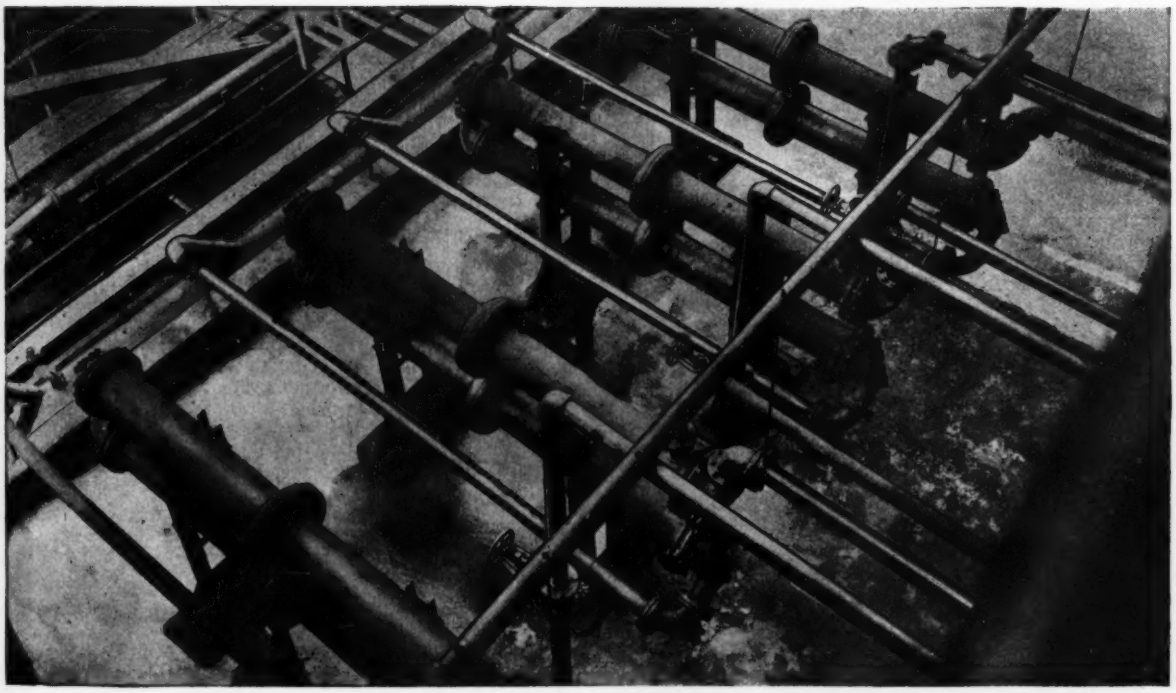

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Holyoke Votes Bonds For Flood Wall

HOLYOKE, Mass. — Yielding to requests from paper manufacturers, the Board of Aldermen has reluctantly passed Mayor Henry T. Toepfert's bond issue order for a flood wall 17 to 3, at a "town meeting" style session.

Remaining firm in their convictions that the money should be taken from surplus and not be raised through a bond issue, but still very much in favor of a flood wall to protect lower Holyoke, Aldermen Howard Bostrom, Michael Manning and George O'Connell voted "no" to the order calling for $81,500 to be raised by a 20-year payment bond, plus $18,500 from surplus, to raise a $100,000 total to represent Holyoke's share in financing the $1,250,000 government sponsored flood wall extension for South Holyoke and Springdale. Alderman Francis B. Woods, who recently submitted his resignation in writing because of a row with Mayor Toepfert on the policy of financing city projects, did not attend the meeting.

Before a well-packed aldermanic chamber and outer corridor, President Brunault read the bond issue order in calling for a reconsider action of a 12 to 4 vote which had licked the bond issue during a special session on May 24. The aldermen on May 21, during regular session, voted to return the order to the mayor and suggested that the money be taken from the surplus account. Mayor Toepfert returned the order to the aldermen after calling a special session, and said he still wanted to raise the money by a bond issue.

President Brunault, after calling for a reconsideration vote, read letters from the Chemical Paper Company, Newton Paper Company, American Writing Paper Corporation, Livingston Mills and from William Heinicke, representing Springdale residents, which were all in favor of erection of the flood wall extension. Accompanying the letters were 14 petition sheets, containing the names of over 600 Springdale residents.

Speaking for the manufacturers, E. C. Tucker, vice-president of the Chemical Paper Company, told the aldermen how a rumor in the paper trade back in the spring of 1936 tabbed the Chemical mill as "being all washed up" because of the damage done by a serious flood. He told how machinery was inundated under flood water in the mill and showed pictures taken during the 1936 and 1938 floods at the Chemical property. Mr. Tucker said that six weeks were lost by employees during the floods. In pointing out the need for a flood wall, Tucker emphasized that the manufacturers are not trying to enter a political financing row between the aldermen and the mayor. "But the city absolutely needs the flood wall."

Another manufacturer, Robert M. Swaney, vice-president of the Franklin Paper Company, pointed out that a flood leaves an unhealthy condition remaining in its wake. James N. Logan, treasurer of the Newton Paper Company, told the aldermen of the plans for additional machinery and how this vital and hard-to-get equipment would be jeopardized after installation if the Connecticut rose to flood stages again. Logan also pointed out that the lower section of the city would soon lose its industrial value if a flood wall were not built. Also urging that a flood wall be constructed soon was Fernand H. Willemain, chief engineer at the American Writing Paper Corp.

Representing the employees of the paper mills in the lower section of the city, Ernest A. Beaudry of the Newton Paper Co., and Andrew Beaton of the Eagle Lodge of Papermakers, and an employee at American Writing Paper, said they did not want to see Holyoke lose the flood wall.

Monsanto Employes Sign New Contract

SPRINGFIELD, Mass. — Across-the-board wage increases of 18½ cents are provided in the terms of the new contract between Monsanto Chemical Co., and the Monsanto UE-CIO local union. The new agreement was ratified at a meeting of the union membership. In a joint statement issued after the meeting, the company and the union disclosed that an entirely new contract had been negotiated, replacing the November 9 supplement to the contract. The new contract will expire May 1, 1947, and is to be signed within a few days.

Under provisions of the November 9 contract, there was granted a 6½ cents an hour general increase. The additional 12 cents per hour, retroactive to May 13 of this year for all workers then in service, brings the total across-the-board wage advance to 18½ cents. The old contract also provided for payment for Saturday and Sunday work as such at time and a half.

The new agreement provides for continuation of time and a half for Sunday work as such, and straight time plus a 12½-cent per hour bonus for Saturday work as such.

Healy Joins Rising Paper as Assistant Superintendent

HOUSATONIC, Mass.—Matthew Healy of Asheville, N. C., a veteran of World War II, has taken over as assistant superintendent of the Rising Paper Co. He is assistant to Harry Norton.

Healy is a graduate of the Syracuse School of Forestry and had a wide experience in papermaking in Asheville. He was a B-29 pilot with service in the Far East. Before the war ended he was flying from Saipan over Toyko. His wife and baby will join him here on July 1.

Mahler Tells What He Saw in Russia

APPLETON, Wis. — Russian thinking is so contrary to ours that no middle ground can be found, Ernst Mahler, executive vice-president of Kimberly-Clark Corporation, Neenah, told the Appleton Rotary Club and guests of members at a luncheon here June 4. Mr. Mahler spent ten weeks in Russia as industrial adviser to the United States Reparations Commission. He said that Russia is far from a democracy, and that no country has so apparent a class system, where the rulers, the party members, live in luxury, while the mass of people earn about $24 a week.

"The Russian government never will fulfill its promises to the people to raise their living standards," he said. Without individual incentive there cannot be a great enough volume of production, regardless of how many five-years plan are developed, he believes.

"In America all of us have heard many times the slogan, 'We must learn to get along with Russia,' but why Russia doesn't have to learn to get along with us, I don't understand." He said that if Russia has an inferiority complex, as is often stated in America, "a charging bull is a piker."

Labor unions in Russia have little power, for the government sets wages, hours and forbids strikes. The only thing the labor unions give their workers are rest homes at which to spend their vacations, he said.

He described a shopping tour in a Russian government store during which he found that the price of an egg was $64, a bottle of beer more than $3, and a Hershey bar $6—in American money. These luxuries are not available to the mass of people, but party members get a discount, the rate depending on the standing of the individual member.

OPA Raises Waxed Ceiling 50 Cents a Hundred

WASHINGTON, D.C.—Manufacturers' ceiling prices for waxed paper have been increased by 50 cents per hundred pounds. No increase in retail ceilings is to result from this action, which is effective June 7, 1946, as retailers' ceilings continue at March 1942 "freeze" levels.

Most waxed paper, however, is sold to industrial users and stores for the protective wrapping of food products. Such buyers will absorb the increase and not add anything to the price of the products they wrap because of the increase.

OPA said that the increase in manufacturers' ceilings was mandatory under the Price Control Act to lift the industry's earnings to the 1936-1939 level. Such earnings had fallen below this base period level because of higher costs for both labor and materials.

How to play safe

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Talk your problems over with our metallurgists. They know what Stainless has done and what it will do in almost any kind of service. They are ready to help you take advantage of the many money-saving benefits that U·S·S Stainless Steel insures—but *only* if they are convinced that it will do a better job for you at lower cost.

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TENNESSEE COAL, IRON & RAILROAD COMPANY, *Birmingham*
United States Steel Supply Company, Chicago, *Warehouse Distributors*
United States Steel Export Company, New York

USS STAINLESS STEEL UNITED STATES STEEL

UNITED STATES STEEL

OPA Sets Up Formula On Peeled Pulpwood

WASHINGTON, D. C. — Paper mills have been given a method of determining their ceiling prices for purchases of peeled pulpwood produced in Arkansas, Texas and Louisiana west of the Mississippi River, by the Office of Price Administration. This method, effective June 15, 1946, requires the mill to file a suggested ceiling with OPA's national office. Unless the price agency advises the mill to the contrary, the suggested ceiling is taken as approved.

The mill is also required to submit the estimated cost of peeling the pulpwood, the type and quantity being bought, location where the pulpwood is cut, name and address of the seller, and approximate date when delivery will be completed.

Existing ceilings for pulpwood produced in this area apply to rough pulpwood. There were no ceilings for peeled pulpwood for the reason that peeled pulpwood generally has not been produced in the area previously. Due to new requirements, however, some peeled pulpwood is now being produced.

The prevailing ceilings for rough pulpwood are $9.75 a cord for pine, and $10.20 a cord for southern hardwood, f.o.b. freight cars or barges.

Mead Corp. Refinancing Approved at Meeting

DAYTON, Ohio—Stockholders of the Mead Corporation meeting here late last week approved a plan for refinancing through issuance of preferred stock and increasing the outstanding number of shares of common.

Stockholders approved issuance of two classes of preferred stock. One will be 100,000 shares of cumulative preferred with a par value of $100. The other 300,000 shares of cumulative preferred shares with a par value of $50. Common shares of the company were increased from 1,000,000 to 1,500,000, no par value.

Proceeds of the new financing program will be used mainly for construction purposes, George H. Mead, chairman of the board, said.

Nelson Runs for Nomination

KAUKAUNA, Wis.—Lewis F. Nelson, manager of the Badger Tissue Mills and mayor of Kaukauna from 1937 until this year, is a candidate for the Democratic nomination for lieutenant governor. He is secretary-treasurer of the Outagamie County Democratic committee and was a delegate to the party's national convention in 1928.

Nonotuck Plant Back at Work

HOLYOKE, Mass. — The Nonotuck Manufacturing Co., resumed operations Monday following a four-week shut-down due to the shortage of copper. The local wire concern got a shipment of the red metal in and was able to reopen. It employs 16 people, and all but one came back to work for the concern after the month's suspension.

Ecusta Takes Steps To Settle Strike

SPARTANBURG, S. C. — The Ecusta Paper Corporation of nearby Brevard, N. C., has agreed to put 80 former employes who went out on a strike in April, 1945, back to work during the next six months period without any back pay.

Ecusta, large cigarette paper concern, also agreed to post notices on the plant's bulletin boards advising the employes of their rights under the Wagner labor act, it was stated. This action is said to be a final settlement of the year and a half old litigation between Ecusta Paper Corporation and the National Labor Relations Board.

Paper Group Will Hear Talk on Labor Relations

The Chicago Professional Paper Group will hold its final monthly dinner meeting until the Fall season, at the Chicago Bar Association on Monday evening, June 17. The speaker for the most interesting program will be Dr. Burleigh B. Gardiner, assistant professor of industrial relations at the University of Chicago who will discuss "Problems of Cooperation in Industry." It is expected that Dr. Gardiner, with a splendid educational and practical background, will thoroughly review trends in the current labor relations problem with some prognostications as to what the future holds in store in the employer-employee relationship field.

Brown Appoints Sargeant To Power and Steam

BERLIN, N. H.—George P. Abbott, manager of the Power and Steam division of Brown Company, producers of wood cellulose, has appointed Guy P. Sargeant of Reading, Mass., as superintendent of the division. Mr. Sargeant was formerly employed by the Aluminum Company of America as electrical construction superintendent and the American Woolen Company, Lawrence, Mass., as chief electrical engineer. He is a graduate of Tufts College engineering school.

New Crocker-Burbank Addition

Chicago has absorbed another veteran into its growing ranks of service men with the announcement that Lt. T. P. Anderson is now associated with Crocker, Burbank Papers, Inc., Chicago office; Lt. Anderson's father, B. W. Anderson, is manager of the Chicago headquarters.

Wisconsin Valley Holds Safety Conference

ANTIGO, Wis.—The fifteenth annual Wisconsin River Valley Safety Conference will be held Thursday, June 13, beginning at 10 o'clock in the morning with a general session which will last until noon. Among the sectional meetings, starting at 2 o'clock in the afternoon, will be one for pulp and paper workers.

Voyta Wrabetz, Madison, chairman of the State Industrial Commission of Wisconsin, will preside at the general session. R. C. Salisbury, Madison, director of the safety division of the state motor vehicle department, will address the general session on "Changes in Wisconsin Traffic Laws."

Arnold Wachs, Mosinee, of the Mosinee Paper Mills, will be judge in a quiz program at the pulp and paper sectional meeting. L. E. Boernke of the Minnesota Mining & Manufacturing Company, Wausau, will be chairman of the all-trades sectional meeting.

Wood County Defers Action On Highway Relocation

WISCONSIN RAPIDS, Wis. — Action on the petition of the Wisconsin Valley Improvement Company, Wausau, for relocation of a five-mile stretch of County Trunk H in the town of Milladore, within the area to be flooded by the proposed Little Eau Pleine reservoir, was deferred June 4 by the Wood County Board of Supervisors until July 2.

It was said that the delay was by mutual agreement. The Marathon County Board is scheduled to meet July 1, and the Portage County Board July 3 to act on similar petitions affecting highways within those counties. Public hearings on the road relocation and abandonment requests will be held before all three boards the first three days in July.

New Distributors for Marvellum

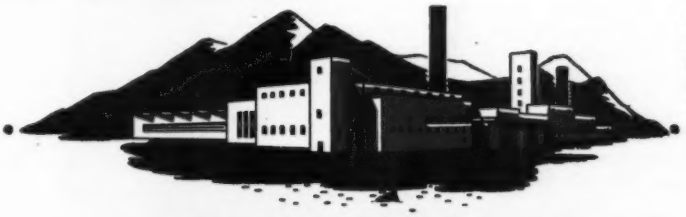
Two Chicago paper distributors, Swigart Paper Company and Messinger Paper Company, are reported to have recently been designated as distributors of two new Marvellum Company products. Messinger is to distribute Marveleather Cover and Swigart is to handle Marvelhide Cover in this area.

Wisconsin Sells 8½ Million Feet

MADISON, Wis.—Eight and a half million feet of pulp and saw wood logs have been sold from state-owned lands for $140,000, Secretary of State Fred Zimmerman has announced. The timber was sold from 4,400 acres in Forest, Price, Iron, Oneida and Marquette counties.

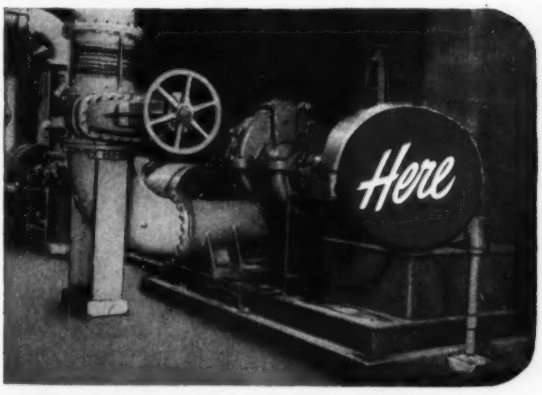
FROM DIRT AND WET

IN THE PAPER MILL AND AROUND IT



These 9 points of self-protection put this TRI/CLAD TEFC *motor ahead of its class*

1. A cast-iron, double-wall frame that completely encloses windings and protects punchings from corrosion.
2. Cast-iron end shields, ribbed for rapid radiation, machined to give a tight seal, yet easily removable.
3. A well-proved, pressure-relief greasing system which makes correct lubrication well-nigh automatic.
4. The cast-iron conduit box is diagonally split for wiring convenience. (Box is independently explosion-proof on explosion-proof motors.)
5. Leads are sealed in a non-shrinking compound where they emerge from frame.
6. Rotating, labyrinth-seal at bearing journal prevents infiltration of grit or liquids.
7. Large, free-flowing air passages that won't gather dust or plug up.
8. Latest insulation treatment over tough Formex* magnet wire.
9. Powerful yet quiet fan is removable, simplifying maintenance. (Non-sparking type fan for explosion-proof motors.)



GENERAL ELECTRIC

Uong Off to China On Research Task

FITCHBURG, Mass.—Diong D. Uong, vice-president in charge of research of Fitchburg Paper Company, has been loaned by the local firm to the U. S. government to conduct a survey of the pulp and paper industry in China. He has left for San Francisco from where he will fly to Formosa, where he will establish his headquarters.

The assignment from the government is expected to require two months for its completion. While in China, Mr. Uong will make a survey of the pulp and paper industry in that land and to what extent the industry was damaged by the Japanese during the war.

Mr. Uong, native of Fuchow, China, is personally acquainted with the pre-war condition of the industry in China and will determine its present condition, the extent of the damage done, and what assistance will be needed not only to reconstruct the industry, but also to bring about its expansion to make full use of all resources of the land.

A spokesman for the local firm stated today that Mr. Uong's assignment is strictly a government project and has no connection with the local plant or its interests. The survey is to be conducted for the benefit of China, to help that country re-establish its pulp and paper industry and does not aim at the development of China as a source for American products, according to information received here.

Mr. Uong is recognized as having unusual qualifications for such an assignment due to his outstanding achievement in the paper industry since he came to this country from Fuchow, China, at an early age.

He has developed several important papermaking machines for the Fitchburg company and during the war was responsible for improvement in many types of papers needed for special purposes by the armed forces.

Mr. Uong entered the employ of Fitchburg early in 1928 as a chemist, shortly after his graduation from the University of Maine. In 1937 he was promoted to a vice-presidency of the firm and given charge of research and engineering for the company.

Weihenmayer Recovers From Crash Injuries

PHILADELPHIA, Pa.—Edwin A. Weihenmayer, 55, vice-president of the Jessup & Moore Paper Company, Commercial Trust Building, is reported doing very nicely after being injured when his car was in collision with another automobile on old White Horse Pike near Winslow, N. J., a few weeks ago. Rose Cawthorne, also 55, of Windsor Farms, Richmond, Va., a friend and business associate of Mr. Weihenmayer, and a passenger in his car, was also injured. Both men were en route to Atlantic City, when their car was struck by another car, the driver of which escaped injuries.

May Newsprint Production Rose to Month High

Newsprint production in Canada during May 1946 amounted to 359,943 tons and shipments to 367,251 tons, according to the News Print Service Bureau. Production in the United States was 65,927 tons and shipments were 65,699 tons. The output in Newfoundland was 31,803 tons and shipments were 30,116 tons making a total North American production of 457,673 tons and shipments of 463,066 tons. Total production in May 1945 was 356,292 tons and shipments were 354,-248 tons. North American production in May 1946 was greater than that in any preceding May, and also exceeded that of any month on record.

The Canadian mills produced 390,-632 tons more in the first five months of 1946 than in the first five months of 1945, which was an increase of 30.6 percent. The output in the United States was 19,811 tons or 6.5 percent more than in the first five months of 1945; in Newfoundland production was 15,231 tons or 11.2 percent more, making a total increase of 425,674 tons, or 24.7 percent more than in the first five months of 1945, and also was higher than in any preceeding similar period.

Stocks of newsprint paper at the end of May were 111,759 tons at Canadian mills, 6,846 tons at United States mills, and 72,272 tons at Newfoundland mills, making a combined total of 190,877 tons compared with 196,270 tons on April 30, 1946, and 163,771 tons at the end of May 1945.

Cowhill Retires from Tomahawk

CHICAGO—Joe Cowhill, for the past eighteen years with the Tomahawk Kraft Paper Co., Tomahawk, Wisconsin, as director, vice president, and sales manager, has severed his connection with that company. Prior to joining Tomahawk, Joe Cowhill for many years was with Price and Pierce, Ltd., handling the sales of Kraft paper manufactured by the mill at Moss Point, Miss. His present plans are indefinite.

Fort Back from Army Service

PHILADELPHIA — Norman W. Fort, Jr., partner in the firm of Thomas W. Price Company, is back at his desk after having served as 1st lieutenant in the 103d Division in France, Germany and Austria.

Badger Mills Wins Safety Prize

MARINETTE, Wis. — Badger Paper Mills, Inc., Peshtigo, it was announced last week, won second place in Group 2 of the general industrial division of the 1945 Wisconsin truck and bus fleet safety contest, sponsored by the safety division of the state motor vehicle department. A certificate has been awarded to the company.

Stevens Raises Pay By 8½ Cents More

WESTFIELD, Mass.—Wage increases of 8½ cents an hour and increased vacation and holiday benefits have been awarded to approximately 300 employes of the Stevens Paper Company here and in South Hadley. The increase brings to 18½ cents the total wage increase granted Stevens' workers since VJ Day, the company said. Workers also received three additional holidays, with pay, yearly, bringing to six the total number of paid holidays.

The company also granted a two-week vacation to all employes with more than five years of service. Employes are not members of a labor union.

John M. MacLaurin Heads McLaurin-Jones in Mid-West

BROOKFIELD, Mass.—The McLaurin-Jones Company, manufacturers of gummed and coated papers, has appointed John M. MacLaurin to the post of manager of the company's Midwestern Division, with headquarters in Chicago. Mr. MacLaurin, a graduate of Harvard University, has had extensive experience in the handling of the company's worldwide export business, prior to his service in the armed forces. He is the son of John MacLaurin, president of the company and founder of the business.

Mill Accountants Present Handbook to Library

HOLYOKE, Mass. — Cost accountants from local paper mills comprised the committee from the Springfield Chapter, National Association of Cost Accountants, who presented the 1945 edition of the Cost Accountants Handbook to the Holyoke City Library. They were Frank T. Koehler of the National Blank Book Co., Godfrey D. Porter of the Crocker-McElwain Co., and Arlin M. Chadwick of the Franklin Paper Co.

Dunns Celebrate Golden Wedding

PORT HURON, Mich. — Theodore Dunn, president of the Dunn Sulphite Pulp Company, with Mrs. Dunn, celebrated the fiftieth anniversary of their wedding on June 1. They received many warm tributes from friends of long standing at a reception in their home in this city.

Kimberly Foremen Hear Yost

KIMBERLY, Wis. — Foremen must work as one man to solve the problems of industry, members of the Kimberly Foremen's Club of Kimberly-Clark Corporation were told at a recent dinner meeting. The speaker was Kenneth Yost, a regional manager of the Detroit area of the National Association of Foremen. His talk was entitled "The American Foreman's Heritage."

Differential Stays On Baled Waste

WASHINGTON — No change is contemplated in the existing $5 a ton baling differential applicable to the ceiling prices of ten grades of wastepaper, the Office of Price Administration made plain late last week.

On these ten grades, ceiling prices since September, 1944, have been $5 a ton higher when the paper is packed in bales of 500 pounds or more than are the ceilings for the same wastepaper otherwise packed or loose. The ten grades are: No. 1 mixed paper, No. 1 news, overissue news, old corrugated containers, extra manilas, mixed books, No. 1 heavy books and magazines, No. 1 mixed ledger (colored ledger), No. 1 white ledger and mill wrappers.

There have been, it was found, widespread rumors in the trade of late that OPA was planning a change in the baling differential for these wastepaper grades, possibly taking the differential off altogether, or allowing the differential for bales of any size or weight. Thus statement was made to set such rumors at rest.

OPA said that the rumors were probably prompted by a complaint against this baling differential that had been scheduled for hearing on May 27, 1946, in the Emergency Court of Appeals at Chicago. The complaint was withdrawn however, prior to the hearing.

OPA pointed out that the stipulation that bales must be 500 pounds or more to qualify for the $5 baling differential on these ten grades of wastepaper had been suggested by wastepaper dealers and consuming mills as being the most practicable minimum weight.

In recent consultations with the industry, OPA was advised not to make any change at this time. Numerous telegrams and letters also have been received protesting against any change being made.

Nelson Joins OPA As Paper Price Executive

WASHINGTON, D. C. — Robert F. Nelson, of Bryn Mawr, Pa., has been appointed Price Executive of the Paper and Paper Products Price Branch, the Office of Price Administration announced today. Mr. Nelson, whose appointment became effective May 31, 1946, succeeds Maurice E. Cody, who has returned to private industry. Mr. Cody will continue to serve OPA as a consultant.

Mr. Nelson was formerly president and general manager of the Glassine Paper Company, of West Conshohocken, Pa. He was associated with this company for more than twenty years. He is a graduate of the United States Naval Academy at Annapolis. During the war he served for a time in the United States Naval Reserve at Washington, D. C.

EDWARD L. WALLACE
Philadelphia Trade Names Him Secretary

Quaker Trade Names Wallace as Secretary

PHILADELPHIA — Nathaniel Saxe, president of the Paper Trade Association of Philadelphia, has made known the appointment of Edward L. Wallace as executive secretary of the association. Mr. Wallace's appointment was deemed necessary at a special meeting of the board of governors in order to bring about a closer relationship with the National Association affairs. Headquarters were opened on June 1st at 1026 Drexel Building.

Mr. Wallace, active in the graphic arts industry in Philadelphia for a number of years, was formerly advertising manager and managing editor of Graphic Arts Review, a printing trade publication in Philadelphia. A luncheon meeting to welcome Mr. Wallace is being planned by the members of the association at Strawbridge & Clothier's on Wednesday, June 19th.

M. R. Hatch, Jr., Joins La Boiteaux Export Staff

CINCINNATI—M. R. Hatch, Jr., formerly associated with W. R. Grace & Company, New York City, has joined the staff of the export department of the La Boiteaux Company, paper and paperboard distributors. He is located at the company's home office in Cincinnati.

A graduate of Vanderbilt University, Mr. Hatch was connected with the South American import department of the Grace Company for two years, prior to entering active service in the U. S. Naval Reserve.

Col. Stott Joins Barber-Ellis

VANCOUVER, B. C.—Lt. Col. Vernon Stott, D.S.O., has been appointed acting manager of Barber-Ellis of Vancouver Limited.

Plastic Coating Gets Tissue Mills Plant

HOLYOKE, M[illegible]—The purchase and the leasing of the former American Tissue Mills wax paper plant on Winter St., was anounced today by Jeremiah T. Downing, president of the J. T. Downing Realty Corp. The Downing firm bought that four-story mill building, containing 30,000 square feet of floor space, and has leased it to the Plastic Coating Corp., of South Hadley Falls, which is embarking on an expansion program.

The Plastic Coating Corp., intends to establish a branch manufacturing plant here to make film paper and coating paper.

American Tissue Mills moved its wax paper division from the Winter St. building in 1942 to its main plant on Crescent St. It leased the building to Worthington Pump Corp., which used the plant during the war for some of its war production work. The lease expired last December and the Worthington passed by its option to buy it.

It is understood that Downing paid about $75,000 for the property. The Plastics Coating Corp., has leased the property for a number of years.

Krock Reorganizes Norwood And Promises Expansion

NORTHAMPTON, Mass. — Edward Krock, Worcester man, who, with his brother, Aaron, bought the entire assets of Norwood Engineering Company at an assignee's sale at the Florence plant Friday, was identified later as an auctioneer known as a specialist in bankruptcy proceedings and sales. The Krocks submitted two bids for the 50-year-old manufacturing company employing some 100 persons. One of their bids was finally confirmed by the major creditors of the concern, manufacturers of paper-making machinery.

A charter of incorporation permitting the concern to resume operations under the name Norwood Manufacturing Engineering Company was issued at Boston, naming Nathaniel P. Rand of Easthampton as president; Edward L. O'Brien of this city as clerk and Aaron Krock as treasurer, and Rand and Edward and Aaron Krock as directors. This corporation is authorized to issue 500 shares of preferred stock at $100 a share and 5,000 shares of common stock at no par value.

The new owners announced that not only would the business continue to operate but its facilities would be increased and new capital would be put into it.

Kimberly-Clark Engineers Picnic

NEENAH, Wis.—The Kimberly-Clark Chemical Engineers' Club is planning a picnic meeting on Stroebe's Island near here on June 18. The picnic will be last of the club's meetings until September.

Container Adds Six To Tomahawk Board

WAUSAU, Wis.—Six executives of the National Container Corporation, New York City, which recently acquired a controlling interest in the Tomahawk Kraft Paper Company, Tomahawk, Wis., were elected to the latter firm's board of directors at a meeting here last week, it was announced June 6.

S. B. Bugge, Tomahawk, president and general manager at Tomahawk under the former setup, was elected chairman of the board and retains the general managership. George L. Ruder, Wausau, was elected general counsel.

National Container officials who became Tomahawk directors are Samuel and J. L. Kipnis and Richard H. Laftman of Jacksonville, Fla.; Marshall M. Bernstein and Harry Ginsberg of New York City, and Lester R. Edwards of Bradford, Pa.

Samuel Kipnis was elected president of Tomahawk; Mr. Ginsberg, executive vice-president; Mr. Laftman, Mr. Edwards and J. L. Kipnis, vice-president; Mr. Bernstein, secretary, and E. M. Kulas, assistant treasurer.

Former officials named directors were C. G. McLaren and H. L. Fitze of Tomahawk. Mr. McLaren was elected vice-president in charge of wood procurement, and Mr. Fitze was elected treasurer and assistant secretary.

Milton Paper Co. Incorporates

Milton Paper Company became a corporation effective June 1st. Michael Milton, founder of this well-known paper jobbing firm, assumes the post of Chairman of the Board of Directors. Active management of the compay will be continued under the direction of J. Milton, President, and S. A. Gifford, Secretary and Treasurer.

The newly elected officers will maintain the policy of service and quality which has been the watchword of Milton Paper Company, Inc., for over thirty years. Plans are now being formulated for a further expansion program in anticipation of the coming freer paper market.

Abitibi Opens Idle Mill

TORONTO, Ont.—Abitibi Power and Paper Company, Ltd., this week renewed production in one of its idle mills after a shut down for three years due to the shortage of pulpwood. Now that greater supplies of pulpwood are available Abitibi will be able to increase its output of newsprint, according to Mill Manager C. O. Sisler.

The total amount of pulpwood that will be available for manufacture at eastern zone mills for the next twelve months is estimated by "Financial Counsel" to be 8,000,000 tons. This figure includes the cut and deliveries and purchases that will have been delivered in Manitoba, Ontario, Quebec, and New Brunswick, and represents a new high peak for pulpwood cut in this area for the Canadian industry.

The drives of logs for this season are well under way. Deliveries usualy take place duilnrg the months of May, June and July. What is delivered in these months each year represents nearly all the raw material for making pulp and paper products for 12 months up to about the middle of 1947. These deliveries should enable the industry at least to continue the higher output and sales that have been a feature of this year to date.

National Blank Book Expands Chicago Office

HOLYOKE, Mass. — National Blank Book Co., is enlarging its Chicago branch and will occupy all of the four-story building at 209 South Jefferson St., Richard P. Towne, treasurer, has announced.

A six-year lease has been signed for this building which will give the local firm 65,000 square feet of floor space. At present the National occupies the basement and the first two floors of this building. The National plans to make the fourth floor a combination stockroom and shipping department, and the third floor, now occupied by Horder's Inc., will be converted into a production unit as soon as equipment and materials are ready. This will be within a year.

The National is enlarging its Chicago branch to care for the expanding mid-West business. Although the bulk of the company's production is cared for in Holyoke, some items in the book-binding field for the Chicago area are made here.

W. Brewster Towne, son of Joseph M. Towne, president of National, is in charge of the company's Chicago branch.

Bob Johnson Joins Dad

PHILADELPHIA — Robert Lee Johnson, well and favorably known to all in the trade, is now working with his father at 307 Lafayette Building. Lee Johnson is mill representative for Atlantic Gummed Paper Corp. and stationery supplies for the Warsaw Manufacturing Company, Inc., of Brooklyn, N. Y. Prior to entering the maritime service, serving as Lieutenant, jg, overseas, Bob was in the employ of Hooper Paper & Twine Co.

FINANCIAL RECORD OF THE WEEK

New York Stock Exchange

High, Low and Last for Week Ending June 8, 1946

STOCKS

	High	Low	Last
A. P. W.	9	8¾	8¾
Armstrong Cork Co.	63½	61¼	62½
Celotex Corp.	38⅛	35	35½
Celotex Corp., pf.	21½	21⅛	21½
Certain-Teed Products Corp.	24¼	23	23¾
Certain-Teed Products Corp., pf.	....	....	....
Champion Paper & Fibre Co.	64¾	63¼	63¾
Champion Paper & Fibre Co., pf.	112½	111	112½
Congoleum Nairn Co.	40	38	38
Container Corp. of America	53¼	52⅛	53
Continental-Diamond Fibre Co.	15⅛	14⅞	14⅞
Crown-Zellerbach Co.	37	35⅜	36⅛
Crown-Zellerbach Co., pf.	109	108	109
Dixie Cup Co.	51	48¾	48¾
Dixie Cup Co.—A	62	61	62
Flintkote Co.	46⅜	45	45⅞
Flintkote Co., pf.	113¾	113½	113½
Robert Gair	11¼	10½	10¾
Robert Gair, pf.	20⅜	20½	20⅞
International Paper Co.	49⅜	46⅝	47
International Paper Co., pf.	123	116¾	117
Johns-Manville Corp.	162	160	160½
Johns-Manville Corp., pf.	147	147	147
Kimberly-Clark Corp.	69	68	68
Mac Andrews & Forbes	42½	42⅛	42⅛
Mac Andrews & Forbes, pf.	....	....	....
Masonite Corp.	69½	67¼	68
Mead Corp.	28	26⅞	27⅝
Mead Corp., pf. A—6%	106	105⅛	105⅛
Mead Corp., pf. B—5½%	106	105½	105½
National Container Corp.	36⅝	35⅜	35½
Paraffine Companies, Inc.	85	85	85
Paraffine Companies, Inc., pf.	....	....	....
Rayonier, Inc.	31⅜	30	30¼
Rayonier, Inc., pf.	38½	37½	38½
Ruberoid Co.	62½	61	61
Scott Paper Co.	58½	57½	58¼
Scott Paper Co., pf.	110	109⅜	109⅜
Sutherland Paper Co.	52¼	50½	51
Union Bag & Paper Corp.	37⅜	36¼	36¾
United Paperboard Co.	13⅛	12⅝	12⅝
U. S. Gypsum Co.	130	127	127
U. S. Gypsum Co., pf.	202½	202½	202½
West Virginia Pulp & Paper Co.	51½	50	51½
West Virginia Pulp & Paper Co., pf.	114½	114½	114½

BONDS

	High	Low	Last
Abitibi Pulp & Paper Co. 5s '53	112⅛	110⅞	112⅛
Celotex Corp. 3¾s '55	....	....	....
Certain-Teed Products Corp. 5½s '53	....	....	....
Champion Paper & Fibre Co. 3s '65	....	....	....
International Paper Co. 5s '47	102	101¾	102
Mead Corp. 3½s '53	....	....	....

New York Curb Exchange

High, Low and Last for Week Ending June 8, 1946

STOCKS

	High	Low	Last
Great Northern Paper Co.	41¾	41	41¾
Hummel-Ross Fibre Corp.	20¼	18	20¼
St. Regis Paper Co.	15⅞	14⅝	15
St. Regis Paper Co., pf.	....	....	....
Taggart Corp.	12¼	11⅛	11⅛

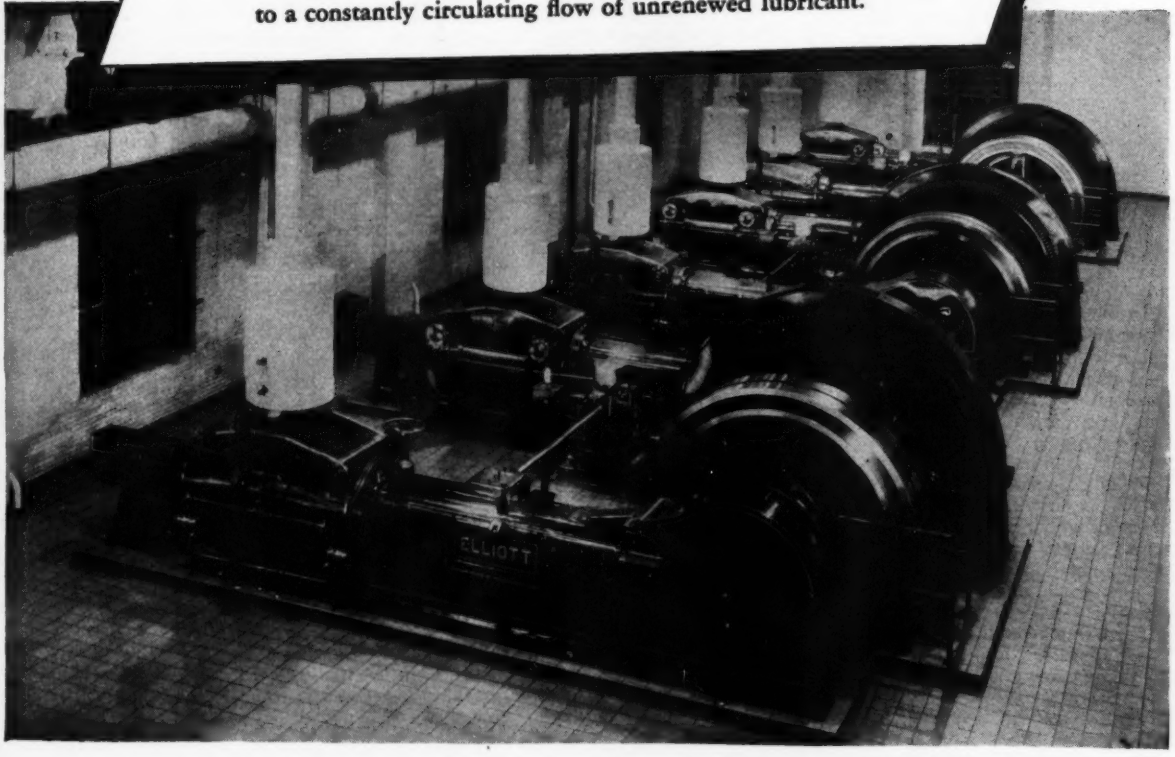
BONDS

	High	Low	Last
American Writing Paper Co. 6s '61	....	....	....

PRECISION REFINED FOR PRECISION EQUIPMENT

SINTURLITE

Designed for service where precision parts are subjected to a constantly circulating flow of unrenewed lubricant.



OXIDATION — always a possibility in lubricants which are constantly re-circulated through high speed mechanism — causes gum and sludge which limits oil life and contributes to inefficiency and equipment failure. The proper lubricant is made to withstand oxidation and resist possible breakdown.

SINTURLITE is precision refined to meet requirements of precision equipment. Extra quality is built in by modern refining methods and special care. Additives give further protection against oxidation.

Non-corrosive and non-foaming, SINTURLITE separates readily from water. For long, uninterrupted service without deterioration, use *precision-refined* SINTURLITE.

SINCLAIR INDUSTRIAL OILS

FOR FULL INFORMATION OR LUBRICATION COUNSEL WRITE SINCLAIR REFINING COMPANY, 630 FIFTH AVE., NEW YORK 20

West Australia Hears Rumors of New Wrapping Mill

PERTH—It is understood that United States interests are considering the establishment in Australia of a factory to produce transparent wrapping paper. A Government spokesman says that in all probability Australian capital would be sought for the venture, with the Americans providing the necessary technical knowledge.

Considerable pleasure has been expressed here at the lifting of restrictions on the use of paper, and the partial emergence of Australia from heavy rationing of newsprint, particularly as this came after the news that the Canadian newsprint shortage would probably continue for at least another year. It shows that in this industry, at least, Australia has executives whose work in collaboration with Government officials has borne fruit.

Australian Paper Manufacturers Ltd. announces that for the half year ended December 31 last, a sustained demand was experienced for the company's products in New South Wales and Victoria. Operations were curtained in November and December owing to labor difficulties and coal shortages, and this has affected financial results. Since the cessation of hostilities there has been a progressive change-over from defence to civil needs, and the demand is now at a level beyond the company's immediate capacity to satisfy. The firm's existing plant has been kept in good order during the war, and progress is being made, as rapidly as possible, in the work of installing a new paper-making machine as part of the post-war expansion scheme. "The outlook for the next six months," state the directors, "is satisfactory."

The Premier of Tasmania, in announcing the recent registration of Tasmanian Paper & Timber Mills, Ltd., stated that the company intended to spend $14,400,000 on its undertaking. However, Captain I. N. Holyman, who is interested in Australian National Airways and in the Tasmanian shipping industry, and who is a director of the new concern, says: "The paid capital will be about 2,000,000 pounds ($9,600,000 at par) and of this 1,500,000 pounds ($7,200,000) will be offered to the public provided the necessary Treasury permission can be secured." Company will absorb Kiln Dried Hardwoods, Ltd., and K. D. Atkins Pty. Ltd., and intends to manufacture a varied number of products, including drugs, photographic and lithographic materials, paints and varnishes, dyestuffs, cardboard and paper.

During recent years the manufacture of paper from Australian grown timber has been established in Tasmania, Victoria and South Australia, with smaller plants also under operation in other States and further extensions projected. At Burnie, Tasmania, production of paper commenced in 1938 from imported pulp, a change-over to local pulp being effected a few months later. At this mill pulp is produced by the soda process, the necessary caustic soda and chlorine being produced by a separate plant near the paper mill. Two paper machines are in operation, products being high-grade printing, writing, drawing, blotting and duplicating papers. Production at Boyer, Tasmania, started early in 1941, newsprint being produced from local pulp to which is added a small proportion of Canadian sulphite pulp. About 540 tons of newsprint are produced each week at this mill.

O. H. Gepp, southern sales manager for Australian Paper Manufacturers Ltd., recently returned to Australia after some nine months in the United States and England, where he investigated matters of importance to the post-war plans of his company.

C. S. Booth, who has acted in Australia for Walmsley's Ltd., of Lancashire, England, for the past twenty years, and has been a member of the board of Australian Paper Manufacturers, Ltd., for over two years, has been appointed assistant managing director of A.P.M. as from July 1 next. Walmsley's, Mr. Booth's old firm, are manufacturers of papermaking machinery.

Lamson Paragon, Ltd., manufacturers of a large variety of paper goods and stationery, reports a net profit for the year of $99,441, a drop of nearly $9,500 on the previous year's figures. Dividend of 10 per cent was maintained, and a one-for-twelve bonus share issue has been made to shareholders. At the same time shareholders have been offered 25,000 new ordinary shares on a ratio of one for six, par value being one pound, and premium being five shillings. This new issue is also in the nature of a bonus as the price of $6 is most favorable against the market price of $9.90.

Much fuss has been made in the local press regarding the "sensational discovery" in England of a "heat-reflecting wallpaper" which will cut down the use of fuel for heating rooms by two-thirds, but similar metallic insulating papers have been on the market here for a number of years, and one type is being successfully used by the Victorian Railways.

Commonwealth Bank figures show that factory sales of paper showed a drop in Victoria last month. Figures for other States are not available.

Stocks of Swedish apple-wrapping papers are still coming to light in unexpected places, and some of the country's export apples are still being wrapped in this pre-war paper.

Thilco Foremen Join National Association

KAUKAUNA, Wis.—The Thilco Foremen's Club of Thilmany Pulp and Paper Company received its charter membership scroll into the National Association of Foremen at a dinner program Tuesday evening, June 4 at the Elks club rooms. The charter was received by F. X. Kreiling, president of the club, from H. J. Post, Dayton, Ohio, managing director of the National association.

Mr. Post was the principal speaker. He traced the development of foremanship training from its earlier stages several decades ago to the present, emphasizing the responsibilities of the foreman both to management and to employees.

Special guests of the club at its dinner meeting were I. W. Keisten, director of the National Association of Foremen; Clarence Bouressa of Kimberly-Clark; Erwin Feldhahn and Tom Heiss of the Combined Locks Paper Company.

Nepco Safety Race Running Dead Heat

PORT EDWARDS, Wis.—Nekoosa-Edwards Paper Company's safety contest is now well into its second month. It will continue until September 30. The unions engaged in the contest, the Papermakers and the Sulphite and Machinists, were tied at the end of the first month, each having experienced three lost-time accidents.

Nepco Lake Opens for Season

PORT EDWARDS, Wis.—The bathing beach and picnic grounds at Nepco Lake have again been made available to all employees of the Nekoosa-Edwards Paper Company. To gain admittance employees must present passes, which may be obtained from foremen, the Nekoosa clock-house or the employment office here. The grounds open daily at 8 o'clock in the morning and are closed at 9:30 at night.

Fitzgerald Recovers from Fever

PHILADELPHIA—Leonard Fitzgerald, mill representative for Schmidt & Auldt Paper Company, Hummel Ross Fibre Corporation, The Beveridge Paper Company of Indianapolis, and Shryock Bros. of Downingtown, is a patient in the University Hospital recovering from an attack of undulant fever.

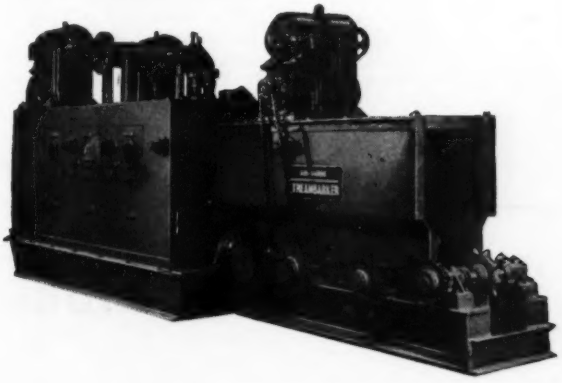
Great Lakes at Top Output

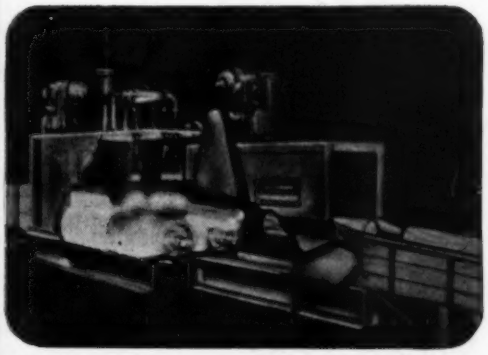
TORONTO, Ont.—May was the best month in the history of Great Lakes Paper Co., according to officials. The company produced 10,000 tons of pulp and 4,800 tons of sulphite during the month. It is back in full production and demand is far in excess of supply, promising a good year, it is stated.

Color-Sound Movie "Streambarker" in Operation!

You will recognize, perhaps more appreciably than before, the important gains which many mills now using Streambarkers are making in their processes. Gains that can be interpreted through elimination of wood loss; simplification of the barking cycle; space savings; better utilization of bark . . . *and in the production of higher-grade pulp and paper.*

At each showing, your audience will receive an 8-page, pocket-size illustrated booklet reviewing the movie. NOTE: this film offer good only in continental U.S.A. ALLIS-CHALMERS, MILWAUKEE. A 2080





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Film runs 10 minutes on 16 mm sound projectors. Copies now available for loan. Mail coupon to Advertising Dept., Allis-Chalmers, Milwaukee 1, Wis.

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PREPARATION—Hydraulic Barkers, Chip Screens, Saws, Slashers.

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PAPER-MAKING — special drives for Paper Machines, etc.

POWER — Generation, Distribution and Control equipment.

MOTORS — all types a-c and d-c, 1 to 7000 hp—Gearmotors.

TEXROPE V-belt drives to 5000 hp—constant and adjustable speed.

PUMPS — Single and Multi-Stage to 150,000 gpm — Stock pumps.

A. Stanley Christie Dies at 58 Years

GARDENVALE, P. Q.—With the passing of A. Stanley Christie, at Vaudreuil, June 1, the Canadian publishing business has lost one of its most enterprising leaders and a much loved friend of those who were fortunate enough to have been associated with him in his many interests in this field. He was president of National Business Publications, known in the paper industry as publishers of the Pulp and Paper Magazine of Canada.

A. Stanley Christie was born on a farm at Apple Hill, in the County of Glengarry, Ontario, on November 4, 1888. He was educated locally and at McGill University, Montreal. He became connected with the publishing industry at an early age being appointed eastern representative in Montreal for Hugh C. MacLean Publications, Limited, in 1911. In April, 1916, he joined Industrial and Educational Publishing Company, Limited, as business manager, where he remained until March 1929, when he organized National Business Publications Limited, to acquire several publications with which he had been associated. He became president of that company on its formation and remained so until his death.

Starting with but three monthly journals and one annual, the company has grown under his inspirng leadership to be one of the leading publishing organizations in Canada and now, with associated companies, is publishing over a dozen monthly publications and a number of annuals.

A. STANLEY CHRISTIE
An Active Career Comes to an End

A man of vision and enterprise, Mr. Christie has been a prominent figure in the technical advances made in recent years by the publishing industry of Canada. He was a director of Federal Publications Limited, Les Editions Nationales, Inc., and Hillside Realties Limited.

In 1930 he was president of the Canadian Business Publishers' Association, and from 1943 to 1945 president of Business Newspapers Association of Canada. On completion of his term as president of the latter organization he was elected president of Periodical Press Association and was just last month re-elected at the annual meeting of that association. This is the highest honor that the periodical publishers of the Dominion can bestow.

Mr. Christie also took a keen interest in Jersey cattle which he bred and raised on his model farm "Glenmar" at Vaudreuil, just west of the Island of Montreal. He was a member of the Canadian Jersey Cattle Club and was the publisher of its official journal, "The Canadian Jersey Breeder."

He was also a member of the Canadian Institute of Mining and Metallurgy.

John Boczon

HOLYOKE, Mass.—John Boczon, well known papermaker here and in the employ of the American Writing Paper Corp. and the Chemical Manufacturing company for many years, died June 6 at his home after a long illness. He is survived by his wife and 11 children.

NEKOOSA PORTABLE WOOD PEELER

ADAPTABLE TO A VARIETY OF OPERATING CONDITIONS

Savings

If wood is peeled in the woods freight on bark is eliminated, less weight per cord of wood is shipped thus reducing freight. Shrinkage per cord is reduced. Wood can be peeled mechanically at less cost than the differential between peeled and rough wood.

Large Capacity
Low Cost Operation
No Wood Loss

manufactured by

Nekoosa Foundry & Machine Works Inc.

Nekoosa, Wis. **U. S. A.**

Pennsalt Names Penfield as Manager of Manufacturing

PHILADELPHIA — Appointment of Walker Penfield as manager of manufacturing of the Pennsylvania Salt Manufacturing Company has been promulgated by Y. F. Hardcastle, vice-president in charge of manufacturing. Mr. Penfield formerly was works manager, a position discontinued in a reorganization of Pennsalt's manufacturing department. The reorganization was necessary because of the increase in volume of production and number of new Pennsalt products, Mr. Hardcastle said. Mr. Penfield will assist and advise the vice-president in charge of manufacturing on improvement of manufacturing operations and fixing of manufacturing policies for all of the company's manufacturing operations except those controlled by Pennsylvania Salt Manufacturing Company of Washington.

Claude S. Beldin, regional superintendent, was appointed to the newly created position of production manager. Mr. Beldin will be in charge of production control, overall supervision and responsibility for production, works storage and preparation for shipment of all products except those produced by the Pennsylvania Salt Manufacturing Company of Washington.

Henry G. Meyer, formerly assistant to the works manager, was named assistant to the production manager, and Russell E. Cushing, director of chemical engineering, now reports to W. F. Mitchell, superintendent of the Wyandotte, Mich., plant.

Mr. Penfield came to Pennsalt from General Chemical Company in 1928. He started in Pennsalt's Development and Research Department, becoming Manager of Engineering in 1932 and Works Manager in 1943. He makes his home in Swarthmore, Pa. He is a graduate of Williams College with AB degree in chemistry, and served in the U. S. Naval Reserve in the first World War. He is a member of the American Institute of Chemical Engineers.

Sales Corporation Publishes New Filter Media Catalog

PHILADELPHIA—The Scientific Equipment Division of Sales Corporation of America, Erie Ave. and D St., has published a complete 32-page catalog on its expanding line of micro-porous-porcelain filter media. Complete with illustrations, porosity charts, flow rate tables, and suggested applications, the catalog also includes full price schedules.

Well known in the pharmaceutical, bacteriological, and chemical fields, micro-porous-porcelain is here presented in such a manner as will materially aid in its application to laboratory and production work in other fields—such as food, textile, petroleum, etc.

Thomas Paper Stock Wins Supreme Court Decision

WASHINGTON, D. C.—The Supreme Court recently circumscribed administrative powers of OPA by a decision in a case brought by Thomas Paper Stock Company of Chicago, Ill. The decision held that a firm, or individual, charged with violation of price control laws, may be entitled to retroactive relief if the laws have been amended since the violation allegedly took place.

Thomas Paper Stock Company was charged with selling waste paper at higher than ceiling prices. The company contended that its sales were regulated by the so-called Taft Amendment to the Emergency Price Control Act. This Amendment, enacted in July of 1943, compelled the price administrator to examine various classes of commodities to see whether proper specifications for maximum prices had been set.

It was not until September 1943, that the price administrator reviewed the situation with respect to waste paper and the company contended that its operation between July and September could not be considered in violation of the law.

The high court upheld this view, although Justice Black in a dissenting opinion said that the judgment "permits this appellant and others to keep profits obtained from sales made at inflationary prices, expressly prohibited by maximum price regulation."

Bury Compressor Company Elects New President

ERIE, Pa.—The Bury Compressor Company has elected B. C. O'Brien as president and general manager. Mr. O'Brien is a graduate in mechanical engineering, of Rose Polytechnic Institute, and has had wide experience in air compressor manufacture and sales. Prior to joining the Bury company, he was associated for a number of years with the Roots-Connersville Blower Corporation where he was vice-president and sales manager.

The Bury Compressor Company founded in Erie in 1902, manufactures a complete line of motor-driven and steam-driven stationary air and gas compressors for all pressures up to 3,000 lbs. psig. for capacities ranging from 30 CFM up to 10,000 CFM, and features the Bury patented frictionless box plate valve which is said to be outstanding for its reliability and low maintenance under continuous operating conditions.

Technical Data Available on Saran Coating Materials

Dow Chemical Company, Midland, Mich., offers technical data booklets on two new Saran coating materials—Saran F-120 a solvent soluble resin imparting very low moisture vapor transmission and Saran F-122 a latex forming a continuous film upon air drying.

Mallinckrodt's Pyridose Controls Slime Evils

New effectiveness and economy in the control of slime in paper mills is forecast by Mallinckrodt Chemical Works, St. Louis 7, Missouri, through the use of its new Pyridose treatment. Pyridose is a conveniently packaged form of Pyridyl Mercuric Acetate, soluble germicide and fungicide developed by Mallinckrodt during the war years. Pyridose is packaged in paper envelopes each containing a full ounce of the material. An ounce so packaged is all that is required for five to fifteen tons dry weight of paper pulp, the amount depending upon the local conditions and the extent and severity of the infestation by slime-forming organisms.

The minimum concentrations of Pyridose required to prevent growth of several common slime-forming organisms in the laboratory have been determined. One part per million of Pyridose inhibited growth of Aerobacter aerogenes, fifteen-hundredths part per million inhibited growth of Bacillus mycoides and five parts per million inhibited growth of Aspergillus niger. Since acetate reacts with chloride and other ions present in mill water, the effectiveness of the least soluble salt, Pyridylmercuric Chloride, was also determined. The results were identical with those for Pyridose except that only four parts per million were required to prevent growth of Aspergillus niger.

Pyridose will also remove slime from an infected system without the necessity of shutting down the mill for cleaning. A dosage of one ounce of Pyridose to each five tons of pulp (dry basis) will usually clean even a badly infected system in a few days.

Harold R. Murdock, Asheville, N. C., well known consultant to the paper industry, has been retained by Mallinckrodt to assist in the technical promotion of the new treatment.

Crane Recognizes 15 For Suggestions

DALTON, Mass. — Bruce Crane announced this week for Crane and Company that 15 employees suggestions had been accepted by the company for May. Although suggestions submitted by superintendents and department heads were accepted these employees will not receive cash awards which is in accordance with a company policy.

Acceptable suggestions were submitted by Miss Ruth Bowerman, Filberto Chicacchiretto, Frank Cooley, George H. Cushine, Francis Hathaway, Edward Kearns, Mrs. Rose M. Morrison, William Munn, Edward Shook, Archie Standish, Mrs. Ellen Stavaski and B. E. Teale. The minimum single award is $5 and some awards range as high as $136.25.

PAPER TRADE JOURNAL

Title Reg. U. S. Pat. Off.

W. L. Cook, Editor

Rufus Woods' Solution

Two industries — the paper and the newspaper — this week take off their collective hats to Editor Rufus Woods, of the Wenatchee World, the state of Washington city of the same name. The editor—he also is publisher—according to informed local sources, turned out his entire staff in the woods of Spokane county to cut trees, thereby earning an increase in his paper allotment. Four carloads of timber was to assure delivery of 40 more tons of newsprint. The pulpwood was to be delivered to the Inland Empire Paper Company mill, and the paper to be shipped by that mill.

From some of his contemporary publishers in the area Editor Woods received a rare variety of kidding, all of it good humored, and some of it only managing to convey the picture of a thoroughly aroused publisher who proposed to take direct, if drastic, action to insure the continuity of his editions. For the woods and Editor Woods are no strangers: he foreswore woodsmanship decades ago.

Not long ago, Rufus Woods, it appears, wrote of his regret in being unable to attend a forest festival at Shelton. He said he had gone to Shelton with his twin brother, the late Ralph Woods, Tacoma lawyer, to work in the woods when they first came to the state. But logging, wrote Rufus, was so tough that he quit it in a short time and was so averse to it that he would not even return to get his wages. Instead, he sent Ralph to do the collecting, and since they were as like as two peas, Ralph got the money without any questioning thought. Rufus got away from the big trees as quickly as possible. He made a complete change in fact, for Wenatchee and the surrounding country must have been practically treeless when Rufus went there.

But if Rufus in his 20's could not stand logging work, his neighbors ask, what reason is there to suspect he will do much work in the woods today? Knowing that logging is no chore for an amateur, Rufus and his gang, it is suspected, may have overrated themselves in proposing to cut four carloads of logs.

No doubt, one caustic critic comments, the greatest activity of the day was when the cook hammered the dinner gong—and it would be a miracle if some newsman or printer did not get maimed in the stampede of calked shoes. However, there are genuine peavey loggers on the other side of the "hump," and if they do most of the work, maybe Rufus and his boys will do all right. The full account of backaches and blisters is yet to come.

The newsprint shortage is something of a creeping paralysis to newspapers throughout the country. In every section of the land newspapers are curtailing their size and trying one expedient after another, such as suspending publication on certain days of the week, eliminating advertising and features, and so on, in order to stretch out their newsprint supply. In Tacoma, a group of coast newspapers have bought a mill that has not been in operation for nine years but is blessed with a paper making machine, and will undertake to augment their present newsprint supplies. The newspapers are going into this venture as more or less an act of desperation. They hope to get enough newsprint to augment their present supplies from regular paper-making companies so as to maintain some semblance of normality.

All over the country newspapers are meeting and doing their best to conquer shortages that many tolerantly recognize are caused by forces outside of the mills' power to control. Here is a midwestern paper omitting its advertising for the duration of the rail strike. An eastern suburban daily shoulders the blame for omitting cartoons, comic strips, even editorials, and patiently explains to its family of readers that it has to conserve its paper stock. Even while its columns recount the list of strikes that have held up deliveries it counts other labor troubles that may affect its supply in the future.

Although the railroad and soft coal strikes have been settled and operations resumed, the country is still feeling their effect in unexpected ways, some of which may continue for a long time. In the meantime a strike of woodsmen in the paper industry of the Northwest and Canada might cause even greater difficulties than have been experienced to date.

"But Rufus Woods and his crew," says a more effete critic, grudgingly, "may have the answer. If they get out the logs, perhaps newspapers in all wooded sections of the land will suspend a day or two each week and go out and cut their own newsprint supply. Mind, we only said, perhaps."

Calendar of Coming Events

June 14-15, 1946—TAPPI Empire State Section, Thousand Islands Country Club, Alexandria Bay, N. Y.

June 17-20, 1946—American Pulp and Paper Mill Superintendents Association, Annual Convention, Poland Springs, Me.

June 28-29, 1946—TAPPI Maine-New Hampshire Section, Rangley Lakes House, Rangley Lakes, Maine.

September 26-28, 1946—TAPPI General Fall Meeting, Hotel Statler, Detroit, Mich.

October 2-4, 1946—TAPPI Engineering Conference, Pfister Hotel, Milwaukee, Wis.

November 4-6, 1946—National Paper Trade Association, Fall Convention, Palmer House, Chicago, Ill.

TAPPI Expects Crowd at Rangeley On June 28 Weekend

The Maine-New Hampshire Section of TAPPI will hold its annual meeting at Rangeley Lake Hotel June 28th and 29th, 1946. A fine program of papers has been arranged and an elaborate program of entertainment. A detailed program will be distributed at the convention. The meeting will open at 10:00 A.M. Friday, June 28th with convention registration. Papers will be given at the afternoon session on the 28th, and at the Saturday morning session of the 29th. Other time will be devoted to recreation.

Arrangements are being made with the Guides Association in conjunction with the hotel management to provide boats and guides for those who want them. For those who do not wish to fish there is a good golf course at Rangeley. A ladies bridge tournament is planned for Saturday afternoon. Ladies may take part in the fishing and golf activities. There will be prizes for the fishermen and for the golf tournament as well as for the ladies bridge tournament.

The banquet will be held Friday evening followed by music and dancing. The picnic luncheon Saturday noon will be held on the shore of the lake after which there will be an exhibition of water sports, log rolling, etc. put on by the Guides Association. The sports dinner will be held Saturday evening when there will be an entertainment and presentation of prizes. The evening, and the convention, will be closed with a dance.

Production Ratio Report*

(Production as per cent of six-day capacity)

COMPARATIVE WEEKLY SUMMARIES

Current Weeks—1946		Corresponding Weeks—1945	
April 27	100.6	April 28	87.0
May 4	107.3	May 5	90.7
May 11	102.8	May 12	85.4
May 18	98.3	May 19	92.5
May 25	99.2	May 26	92.0
June 1	*96.3*	June 2	87.9

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Year Avg.
1945	86.7	89.4	90.2	88.1	89.8	91.2	80.8	88.6	90.2	95.9	95.5	91.0	89.7
1946	94.7	98.4	104.4	102.7	*100.7*								

COMPARATIVE YEARLY SUMMARIES

	1939	1940	1941	1942	1943	1944	1945	1946
Year to Date	79.8	86.4	92.6	100.8	88.9	88.3	88.6	99.9
Year Average ...	83.4	85.6	97.4	90.4	87.8	88.1	89.7	

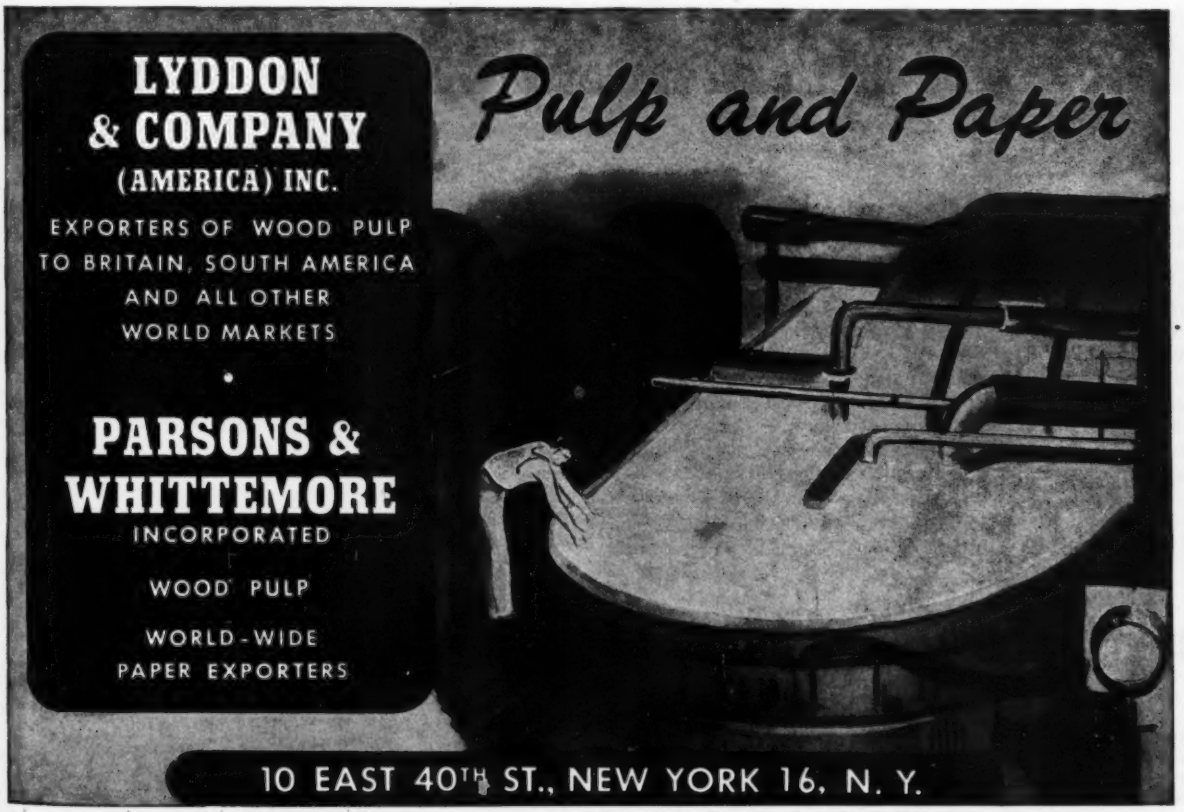
*Based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available. Does not include mills producing newsprint exclusively.

PAPERBOARD OPERATING RATIOS†

Current Weeks—1946		Corresponding Weeks—1945	
April 27	95	April 28	99
May 4	101	May 5	97
May 11	97	May 12	94
May 18	92	May 19	97
May 25	93	May 26	97
June 1	*85*	June 2	93

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Year Avg.
1945	91	95	97	97	96	96	86	90	91	97	95	85	93
1946	90	97	100	99	*94*								

†Per cents of operation based on "Inch-Hours" reported to the National Paperboard Association.



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• In commercial frozen food lockers, wet strength paper made with PAREZ Resin 607 saves time and trouble since it can be stripped off the food without tearing.

• For home quick freeze locker units, PAREZ-treated wet strength paper wrappers can be handled many times without failure.

WET STRENGTH LOCKER PAPER

made with

PAREZ** RESIN 607

THE GROWTH of the frozen food locker industry since its inception in 1934 has been phenomenal. Based on the present average of users per plant, it is estimated that within a few years there will be 25,000 plants and 11,000,000 lockers in use, serving 38,000,000 individuals.

A big factor in the growth of this industry has been the development of a satisfactory wet strength locker paper. Use of wet strength paper makes it possible for locker operators to strip meats of their wrappers in one piece instead of scraping many separate pieces of paper when non-wet strength paper tears. Also, with home quick freeze units where it is common practice for the user to thaw, unwrap, remove portions of meat, fruit, or vegetables, rewrap remainder, and replace package in the freezing unit, wet strength paper wrappers will withstand such handling without failure.

Much locker paper is now being made with Cyanamid's melamine paper resin, PAREZ Resin 607, which imparts this necessary and invaluable wet strength. PAREZ Resin 607 also provides improved dry strength and fold endurance. Paper stocks can be produced by simply adding PAREZ Resin 607 in the regular paper manufacturing process.

Our technical service representatives will be glad to work with paper manufacturers who are interested in the production of wet strength locker paper, or to assist in mill trials of PAREZ Resin 607. PAREZ Resin 607 also imparts improved wet and dry strength to many other types of paper, from paper board to fine tissue, for a wide variety of paper products.

American Cyanamid & Chemical Corporation

(A Unit of American Cyanamid Company)

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DISTRICT OFFICES: Boston, Mass.; Philadelphia, Pa.; Baltimore, Md.; Charlotte, N. C.; Cleveland, Ohio; Chicago, Ill.; Kalamazoo, Mich.; Detroit, Mich.; St. Louis, Mo.; Azusa, Calif.; Seattle, Wash. In Canada: Dillons Chemical Company, Ltd., Montreal and Toronto.

**Trade-mark of American Cyanamid & Chemical Corporation covering its synthetic resins for use by the paper industry. The processes under which PAREZ is applied in the production of wet strength paper are covered by U. S. Patents Nos. 2,291,079; 2,291,080; and 2,345,543; and U. S. Patent Application Serial No. 453,032.

Waxes • Wax Sizes • Resin Size
PAREZ** Resins • Synthetic Resins
Casein • Alum • Sulphonated Oils
Fillers • Defoamers • Soda Ash
Caustic Soda • Salt Cake • Acids • Clays
Satin White • Aerosol*
Wetting Agents • Calmicro
(Calcium Carbonate) and
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Section of the
TECHNICAL ASSOCIATION
OF THE PULP & PAPER INDUSTRY
122 E. 42nd St., New York 17, N. Y.
Edited by R. G. Macdonald, Secretary

Some Aspects of Pulp Mill Engineering*

By George R. Wadleigh[1]

Abstract

When management decides to proceed with a project the need of speed is so great there is little time for an engineering study of many of the necessary features. Some of the neglected points in wood yard, barking, chipping, storing, cooking and washing are discussed with certain data given.

Considering pulpwood of the eastern and southern United States arriving by the usual transportation facilities, rail and truck, much manpower is lost through having insufficient loading track, conveyors, and hoppers not close enough to cars nor properly placed in relation thereto. More than two men in a box car is distinctly inefficient, as is also the unloading of the usual wood truck by hand. The dumping of trucks from a special dumping platform onto which the truck can be backed should be used. Such an operation saves 15 to 20 minutes per truck. Conveyor design should be such that men are not required at transfer points, and variable speed drives for such should be used. The use of a sluice for wood receiving, both floating and non-floating, should be in much greater use, as should also crawler cranes for open car unloading and with proper buckets for reclaiming wood from conical piles.

Barking drums are discussed with adaptation to the work to be done, together with the wood handling in connection herewith. Hydraulic barking is briefly reviewed.

Facilities for sorting need to be better developed, together with the return of wood for a second passage when improperly barked.

Much more attention should be given to obtaining chips of uniform size due to the liquor penetration rate. This requires a more precise chipper, better handled. Chippers should be heavier with better bearings and facilities for quick knife changing.

The storage of chips with bins at the ground level is recommended, such designed for easy chip release and chip blending.

In cooking, digesters with larger throats are recommended for speedier filling. Better circulating equipment is needed with more use of hydraulic principles in design of the pumps, strainers, and piping.

Concerning washing, of the six known methods—diffuser, pan, cylindrical, filter, centrifugal, press dilution—too little attention is given to the sharp separation of liquors in the first three, again largely due to missing hydraulic principles.

The intent of this paper is to outline certain features in the construction of a soda or kraft pulp mill which are commonly neglected in its original design. These involve real economies of operation and first cost and are sometimes added in crude form by the operating force which often has little engineering knowledge. These omissions happen partly because, after months or perhaps years of consideration of the project by the management, the decision to proceed is suddenly made and management desires that the construction be started in a matter of weeks; partly because those in charge, or to be in charge, of operation have little engineering training; and partly because, in the intervals between periods of construction, the engineering forces are often considerably depleted or too busy with maintenance to give a real study to the mechanical, hydraulic, and thermal problems involved in a future design.

Engineering as applied to pulpwood production is a very large subject and scarcely within the scope of this paper, therefore, a start will be made with the wood yard for which a complete design is rarely worked out by engineers. This is often a fairly level piece of ground with pile locations, sidings, and a few conveyors with fire protection. The details are commonly left to the yard crew to develop as required.

Mixed woods in their rather green state as delivered to the mill will sink — for the hardwoods about 50%; for the balance, 5 or 10%. After a few weeks in storage practically all will float. In the East and South pulpwood is obtained in lengths of 4 foot, 5 foot, and 5 foot 3 inches of infinite diameters ranging from 2 to 24 inches, and with an infinite variety of weights. An average diameter for the South is 7 to 9 inches. Far Western woods are in another category.

Yard

The raw material is delivered at mill rough (with bark on) or peeled. The delivery is by car of various types—rack, box, flat, gondola, and even coal. The capacity runs from 12 to 20 cords. Trucks used are rarely of dumping type, the capacity being 1½ to 3 cords. Barges carry perhaps 100 cords. The volume of a cord, of course, varies with the dimensions, running from 128 to 168 cubic feet.

Removing the wood from a box car is a matter of manpower as the dumping of such a car as is done with grain, coal, and other granular products, calls for very expensive machinery ($75,000 and above per dumper) and a large receiving hopper of some kind. Such an operation, no doubt, would damage

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the car heavily, particularly the box type. Excepting for a pond, no receiving hopper for such a large quantity of raw material at once has been developed.

The best present procedure in unloading box cars is to limit the number of men to a car to not over two, have conveyors or receiving hoppers close to and below the level of the car floor, and so constructed, placed, and built that sticks can be thrown out at random. Rarely is special provision made for removing the wood piled between the doors readily, this wood taking twice the man-hours per unit to unload as does the balance of the car after a floor has been established. A movable platform over conveyor adjoining car is recommended. At some of the older mills wood is transferred from the delivery car directly to a dolly car which is pushed to the chip house, such wood requiring the placing of each individual stick. This costs twice as much per unit as when the wood can be thrown out of the car door at random. Raising the outer rail of an unloading track about 4 inches has been found to reduce unloading costs about 20%. It is far from common practice.

Where stake cars are available, such as are in common use in the South, the problem of unloading is simpler, the cords per man being about double that of box car unloading and more men can be used per car. The cost of such unloading can be further reduced by the use of a crane with a proper bucket or the use of one or another power device not yet on the market.

Truck wood is commonly unloaded by hand, the cost of so doing "apparently" falling on the vendor. There is no real reason why such standard trucks should not be run onto a tilting platform and mechanically dumped as is done with cottonseed, coal, etc. The time for this operation is about 1 minute against 25 minutes that is required for hand unloading. The cost of dumper would run from $4000 to $7000. To receive several cords from a truck a batch receiving device in the shape of a special hopper or small pond will need to be provided. Less expensive than hand work is that accomplished with a light crane and clamshell bucket. This requires cooperation on the part of the trucker as to placing of stakes and chain arrangement.

Wood received from the river or sluice in pulpwood lengths is often expensively handled. The conveyors should have feeding devices such as overhead chains, suction drawing the wood in against the conveyor, and the width great enough to permit wood at random to come against the conveyor. Ultimately this wood needs to be paralleled in order to travel successfully on a delivery conveyor of any length.

The receiver of pulpwood sticks from car or truck may be a conveyor chain or cable and buttons or a dolly truck; occasionally a sluice with slow-moving water, sometimes such with swift water; at times a piler with its lower end butted against the car, this latter conveyor creating conical piles.

Conveyors parallel with car tracks should be of such width that wood will rarely be thrown across them, and of such shape that wood sliding down their 25 to 35° sides will not strike the chain or cable end on. The unloading conveyor section should permit numerous cars unloaded at once or without much switching, adhering to the rule with box cars "not more than two men to a car". Where the wood is to go direct to pile and a portable piler is used, side feeding conveyors are necessary to keep the main feeder up to capacity. Variable speed drives for conveyor work are advocated, this adapting the wood flow to the capacity of the receiving equipment.

Under proper conditions a slow movement water sluice as a receiver and conveyor is excellent. If used, it should be of sufficient depth to protect the bottom from the blows of the wood. It should have heavily protected edges and sufficient storage capacity so that the batches received from the cars and trucks can be equalized producing a continuous operation of the barking, sorting, and chipping equipment. With proper design this will serve for either floating or nonfloating wood. The disadvantage of water conveying is the wetting of the bark which lowers its fuel value. Unfortunately, bark, except as fuel and under certain conditions for tanning extract, has been found to have little value so far. It is a miserable filling material for low ground, is not desired by the railroad people as freight, and contaminates rivers and waterways when it is dumped into them.

In the yard, wood must go to the pile or barking drum or chip house via conveyor or sluice. There can be an increase in safety and manpower can be saved by better design of conveyor transfer points.

The necessity of men getting close to nearly vertical, at random, storage piles in reclaiming is a most dangerous practice and such work is high in manpower because of the attention each operator must give to his personal safety. The use of a crawler crane with orange peel bucket saves at this point; where one swing from pile to receiving conveyor will reclaim at a figure of 20 to 25c per cord, which is a fair figure.

Where ranked storage is used, the crane and special wood bucket can eliminate much labor.

A decision as to storage piles between conical piles at random, against racking depends upon the number of species of wood, length of seasoning, ground area, wood delivery, whether peeled or not, and various other factors.

Barking

The mechanics of barking drum design in detail would comprise a paper in itself. Practice in this country seems to limit the diameter to about 12 feet. Scandinavian countries have them up to 20 feet in diameter, and even more. Indications are that the barking capacity varies directly as the length of a drum and about as the cube of the diameter. Its relationship to speed is not yet established. Where several varieties of wood are in use, the drum will require frequent emptying to avoid mixing. Almost never is there any provision for quick unloading. This can readily be accomplished through making the delivery end dam mechanically adjustable as to height and perhaps placing the drum on a slight slope towards the delivery end. Here, in particular, adjustable feeding rates determining the time in drum through a variable speed feeder are desirable. An adjustment between thorough barking and a minimum of brooming requires close control of the time of wood in the drum by the wood inspector. He should be able to control this by the mere handling of a switch or button conveniently placed. About 15 cents per cord is a fair figure for drum barking.

The hydraulic barker calls for thorough consideration. It seems to be best adapted for straight wood in large diameters. The power would be more than that required for drums. The bark has less fuel value than that from dry drums. The manpower will be greater. On the other hand, the brooming should be less and the wood cleaner. The merits of the two methods can only be compared when power values,

water supply, and bark disposal factors are known. Hydraulic barking will probably require a more skillful maintenance crew than is common in most wood yards.

Sorting of the wood in two ways is required—first, for cleanliness and, second, for size adapted to the chippers. These can be carried out separately or simultaneously, the wood passing over a sorting table with variable speed control. The table should be equipped with a quick acting hoist for the removal of heavy sticks, and ample facilities should be provided to send oversize wood to the sawmill or splitter or improperly barked back for a second trip through the barking equipment. The hand removal of defects in the rejects against brooming loss caused by a second trip through, needs evaluation.

Use should be considered of magnetic or radar means of detecting metallic imbedments in the wood between the point of sorting and chipping.

The use of the electric eye to count the sticks entering chip house can prove of value as a rough check on other means of wood measurement to obtain the true input to the mill.

Bark burning in the South with wood of 30 to 40% moisture will produce about 3 pounds of 1300 B.t.u. steam per pound of bark if proper equipment is available. Northern woods under the same conditions should produce about 85% as much but it is quite commonly thrown away. Neither pays for the additional handling cost and freight on rough wood.

Wood yard drainage is a rather commonly neglected factor. As crane and bucket or crawler type come into more usual use the need of a well drained yard becomes more apparent.

An early study and decision as to the hours of operation of drums and chip house is a necessity and fixes the size of equipment. Night work is very expensive and justified only in emergency. In spite of this, the irregularity of wood deliveries will make night operation on some occasions imperative.

Lighting of such yards is rarely adequate.

Chipping

In setting up the chipping arrangements the importance of uniform chips of proper length is rarely given sufficient weight. It is intimately tied in with the cooking yields and quantity of screenings. If liquor penetrates nine times as fast endwise of the chip as sideways, the proper dimension balance should be worked out by the research departments and the equipment of the chip house adapted thereto.

For uniform chips the chipper should be a rugged machine with precision bearings, both radial and thrust, adequately powered, and with all knives capable of easy removal and precise setting to 1/32 inch or closer. The spout should be slightly smaller at throat entrance than at exit. This will prevent many jams in the throat. Much use can be made of a quick acting hoist with heavy tongs to remove jamming pieces.

The Scandinavian countries make much use of chippers with discharge nozzle pointing upward at 45° or thereabouts. Chips can in this way be elevated 15 feet or more, avoiding much elevator construction at the expense of more power. As a plant with modern power equipment can afford to expend 100 to 150 horsepower if a job can be eliminated, there is no objection to this method excepting that more breakage of "cards" may ensue. Proper design of blades on back of disk, piping, and receiving separator will prevent this from becoming excessive.

Delivery to screens can often be bettered so as to make use of the entire surface.

The common crusher for reducing size of screen rejects is an inadequate affair and a good sawdust producer. Minimum sawdust is desired and only enough cutting to insure that length shall be that of standard chips. This cannot be accomplished by beating up improper sizes promiscuously. A cutting action is required, cutting strings and splinters into standard lengths. Two per cent sawdust with $6 or $8 wood and a 100-ton mill is one thing, with $20 to $30 wood quite another. Fines and semisawdust, if to be used, should be stored and cooked separately under proper conditions.

Storage

The only present day excuse for bins over digesters is lack of sufficient ground room which should not occur in a new plant.

Elevated bins are more expensive, generally lack capacity, and provide little flexibility in cooking.

Adequate sectionalized bins provide room for storage of separate species of wood to be cooked separately, if desired. They provide for blending of the same species but from different districts and of different ages. The textile, cement, and many other industries make much use of blending; not so the pulp industry. Such a procedure should make for more uniform pulps.

Bins should be larger at bottom than at top, avoiding arching, and be provided with mechanical feeding bottoms, avoiding pounding, rodding, etc., and permitting chip conveying equipment to run at full capacity to fill the digester quickly.

There is some latitude as to conveying method but for moving large quantities rapidly with low power it is difficult to improve on the belt conveyor. This also permits of the use of the weightometer which with an automatic moisture sampler would do much to forward pulp mill accounting.

Carriage of chips to digester in its own cooking liquor has possibilities not thoroughly explored.

Cooking

To take full advantage of easily emptied bins, digester throats should be at least twice the commonly used area. With modern steels, air-driven bolting tools, various clamping devices, and perhaps an air hoist, there should be no trouble in developing these large heads.

Chip packing in digesters with material increase in capacity is practiced in various ways; some are tied in with the introduction of the cooking liquor with the chips. This latter procedure calls for liquor not over 200°F. The hotter the liquor can be introduced (preheated by inexpensive low pressure steam costing about half of that at cooking pressure) the cheaper the process and the quicker the cooking time. Some years ago an attempt to introduce liquor well over the boiling point would have been extremely difficult, this trouble being as much due to valves as anything else. Now, with stainless steels and with proper piping, there should be no real difficulty in perfecting such an arrangement. The most accurate measure of liquor is by tank though a high-grade flowmeter would give a measurement at least as accurate as that of the wood. Such would avoid the expensive practice of open tanks on elevated platforms often used with crudely designed heating coils therein. Tubular heaters in the liquor feed to digesters can give the final lift in temperature required. Again,

careful engineering design of these is required, especially in sulphate liquor with its corrosive qualities. It is probable much of the retarded progress in indirect cooking has been because of poor heater design and lack of metallurgical knowledge.

Concerning digester circulation, the Scandinavians have developed several methods using a screen about midway in height delivering most of the liquor at the bottom with some at the top. Tests made with common circulation delivery of liquor on top of the chips generally indicate an initial pumping rate close to the designed rate with very rapid recession to one-half or one-third of that desired. The hydraulics of the system, particularly strainer location, arrangement, and cleaning methods, are rarely thoroughly developed. It is rather obvious that all liquor should enter at the bottom, be well distributed, and be drawn from the top above the chips. Piping and strainer system to accomplish this is entirely a possibility. The relief can no doubt be worked into the same arrangement. Here, again, stainless steels prove their worth, always bearing in mind that cold working of stainless such as rolled in heater tubes, drops much of its noncorrosive value.

Circulation pumps themselves frequently omit the qualities needed for low maintenance, such as ample packing room, lantern glands with interior pressure of water or weak liquor superior to the digester pressure, glands with only one point of adjustment, over-size shaft, cooling water on bearings, ability to dismantle without removing piping, proper motor protection, and sufficient stainless parts.

Digester supports should be designed for even load distribution rather than strength alone. In one instance where perhaps eight lugs were furnished on a digester supported on steel amply strong, the support design permitted varying deflection at certain points, unduly straining the digester plate at some points.

The modern conical bottom does much to eliminate secondary blows to clear the digester but the screen arrangement too commonly eliminates part of the gain. Secondary blows are decidedly expensive, both in steam and time. Steam piping, steam control, and safety valve arrangements should not be left to the operator or pipefitter to work out. There is no good reason why with careful analysis of the problem such nuisances as plugged up safety valves and black liquor blowing back into the steam supply should happen.

Digester blow arrangements with heat recovery have been well covered in several past papers.

The pulp industry has been very slow in adopting heat recovery at this point notwithstanding that in its simplest form the cost of heat recovery equipment is low and pays for itself at a high rate. Where a cyclone is used for steam and pulp separation, it is rarely designed in accordance with developed tests on centrifugal separation nor is the steam and vapor piping designed otherwise than in following precedent. The disadvantages of blowing to too great heights of cyclone need more consideration as does the piping friction factor and the size of the blowpipe. Some other points concerning the blow are discussed under Washing.

Passenger elevators are rare in the older digester buildings. Why doesn't the industry copy the flour mill operators with their man lifts and save the operators' legs?

No attempt is made herein to compare the merits of tumbling digesters, continuous cooking, counter current, and vacuum chip treatment. The latter three are not in usual use though the Asplund disintegration of partially cooked chips is an actual continuous cooking, and is in operation in a number of plants.

Someday some mill man will install a modified de la Rosa outfit using a tall tower requiring no entrance packing thus emulating to some extent the oil refiners who are not afraid to go into the air. As to vacuum treatment of chips, it is so common in the impregnation of wood for preservation it is hard to understand its lack of use in pulpmaking in shortening the cook and producing a more uniformly cooked fiber. There certainly exists no mechanical obstacle to its use.

Washing

In the case of sulphate and soda washing, operators are far too content with, say, 1½ gallons of liquor per pound to the evaporator when proper hydraulic handling of the problem would mean a dilution of cooking liquor to not much more than 1 gallon and for a 100 ton mill a saving of $10,000 to $20,000 per year in quadruple effect evaporation. The merits of the six known washing methods: true diffuser, pan, vacuum filter, centrifuge, press, and dilution will not be compared. The success of the first three depends on displacement and the maintenance of a sharp line (a flat surface) between the liquors of different strengths. As the areas over which this line should be maintained are large, very slight variations in the displacing head at any point and the resistance of stock to flow make large undulations in the surface. One liquor should follow another as a piston. The builders of continous filters recognize this necessity in their arrangement of large liquor capacities of passages and provision for getting a quick and uniform thickness of cake on the filter. A diffuser and pan designer rarely provides for even stock distribution nor for the introduction of the following liquor without penetration into the preceding liquor. Too many times the draining arrangements are faulty, the piping and connections allowing the liquor to move more rapidly through one section of the bed than another. Sometimes this trouble is due to the operator, as an instance in the author's experience, leveling his stock with weak liquor instead of using the strongest available.

Pan and diffuser screen bottoms are often designed with no expansion provision resulting in cracked, perforated plates which should be of stainless steel resting on corrugated support and eliminating the crimped screen of short life, often used.

Mechanical washout of pans and diffusers is not common in this country though thoroughly practicable and much used in Scandinavia. The insulation of the walls of such facilities saves heat and inequalities in temperature, the latter resulting in local currents and the mixing of the liquors.

In filter washing, too little weight is given to the time element necessary to the osmotic or diffusing action in getting one liquor out of the fiber and another one in. This time element can be aided by the use of several stages with intermediate storage tanks. The cost of these must be evaluated against the soda loss.

To avoid pumps to produce the suction necessary to the vacuum washers the dropleg is commonly used. This, while simple, is not always the best. It compels the high elevation of large volumes of liquor and high supports for the washers and is none too good as a gas remover.

In the handling of pulps the greater first cost of equipment carrying 1½% of stock needs to be more carefully balanced against the three times greater power and smaller equipment required to move a similar quantity of 3% stock.

An increment value of power costs for the use of the designer and operator, rather than the overall costs as shown on the company books, would ordinarily add much to getting the best balanced design for the purpose desired.

As to dilution washing, the use of numerous deckles in series with wash material counter-current carefully worked out has shown results about equal to those of displacement washing. Further study of this method in the light of modern equipment is recommended. Whether some partial mechanical treatment of the stock by some form of disintegrator prior to washing is of real advantage needs more study and experiment.

The present drive for stream and waterway purification makes the problem of stock washing with minimum dilution and maximum chemical recovery a paramount problem in pulp mill engineering.

The balance of the pulp mill screening, riffling, storage, and bleaching offers a fertile field for engineering study, but time available will not permit going into these features on this occasion.

The recovery plant should not be considered as part of the pulp mill but as a separate operation manufacturing caustic soda, sodium sulphide and steam. It should have its own cost accounts showing heat and chemical balances as does the power plant.

Many of the departures from usual methods suggested herein call for higher grade operators than are commonly employed. This is admitted, but the total number of operators should be less, as well as maintenance, and the availability of units greater. A very large number of pulp mill operations are much more mechanical than chemical in nature, and operators should have a reasonable training in machine shops, not commonly given, prior to having much pulp mill maintenance fall within their scope. Digressing a bit, this comment is particularly true of the paper mills where men are expected to produce mile after mile of fabric to tolerances of a thousandth of an inch or less, when most of the crew have had no machine shop experience with its education in small tolerances and adjustments.

The author's plea is, first, for more time for engineering study of a new plant before work is started, giving opportunity to make use of advances in other industries, and, second, for operators with better machine training who will maintain and get out of that equipment all that it was intended to accomplish. This further requires that a "bogey" be set up for each unit and a periodical check against it be made.

Bleeding Resistance of Asphalted Paper*

TAPPI Tentative Standard T 475 m-46

The test is designed to measure the ability of asphalt laminated or similarly treated case liners or baling paper to avoid staining the contents of a case or bundle. In this method a piece of the material to be tested is sandwiched between two pieces of smooth white paper and kept at 150°F. for a definite time, under a definite pressure, after which the contiguous white paper is examined for staining by the asphalt.

Apparatus

1. *Pressure Block.* A block of metal 3 inches square, weighing 4.5 pounds, with a flat and smooth under face. A wooden knob fastened to the top of the block conveniently serves as a handle.

2. *Bedplate.* A piece of metal 3 inches square and about ¼ inch thick, having a smooth flat upper face.

3. *Plate Guide.* This may conveniently be made from a 5-inch square of sheet metal with a 1-inch equilateral triangular piece cut out of the center of each side, and the corners bent up at 90° around the sides of the bedplate to serve as vertical guides for the pressure block.

4. *Metal Sheets,* 3 inches square, made from flat and thin aluminum sheet or heavy foil.

5. *Paper Sheets,* 3 inches square, cut from smooth, white coated or imitation art paper.

6. *Oven* capable of maintaining the specimen assembly at a constant temperature of 150 ± 2°F. (65.5 ± 1°C.).

Test Specimen

The test specimens shall be 3-inch squares cut in such a way as to be representative of the sample to be tested.

Procedure

Put the specimens and the disassembled apparatus in the oven at 150°F. for a sufficient time for all to reach oven temperature. Place a specimen between two squares of the white paper, and place the combination between two aluminum separator sheets. If desired, several of these sandwiches may be laid on one another, but separated by single metal sheets, and tested simultaneously. Place the sandwiches on the bedplate in the guide and cover with the pressure block (which exerts a pressure of 0.5 p.s.i.). Accomplish this assembly with as little cooling of the apparatus as possible. Leave the assembly in the oven at 150°F. for 5 hours, then remove, separate the sandwiches, and examine the white paper for staining by asphalt or other exuded material. Disregard any staining arising from the cut edges of the specimens.

Report

Report the staining as none, slight, moderate, or considerable, and describe the nature of any staining.

Additional Information

The size of the specimen and metal blocks may depart from that specified, provided the pressure amounts to approximately 72 pounds per square foot (0.5 p.s.i.). The pressure, however, does not appear to be very critical, providing it is sufficient for good contact between the white sheets of paper and the test specimens.

Care should be taken that radiant heat does not raise the temperature of the assembly considerably above the indicated temperature of the oven.

*This method has been approved as a tentative standard by the Packaging Materials Testing Committee. Criticisms are earnestly requested and should be sent to R. G. Macdonald, Secretary, Technical Association of the Pulp and Paper Industry, 122 E. 42nd St., New York 17, N. Y. Reprints of this standard may be obtained from the Secretary at 25 cents each.

Speed of Penetration of Printing Ink Into Paper*

By Andries Voet[1] and John S. Brand[1]

Abstract

When a printing ink has been printed on an absorptive paper, the pigment part either remains completely on the paper surface or is embedded in the upper paper layers, while the vehicle part is drained off by the paper. The rate with which this latter process occurs is of great significance for the setting of printing inks. A photoelectric method of measurement of this penetration speed is given and some of the results obtained are discussed.

Penetration of printing inks into paper plays an important part in the drying of printing inks.

A conventional method to determine the speed of penetration of an ink into a paper is the flotation method whereby the paper is deposited on the ink surface or on an ink drop and the time is marked needed for a complete vehicle penetration causing uniform wetting of the reverse side. This method is rather unreliable because of the difficulties involved in accurately estimating the moment of completed penetration.

Paper manufacturers have replaced inks with a test vehicle, for which castor oil generally is used. A castor oil test is adopted as a standard *(1)*.

An extensive literature on this subject exists. Strachan *(2)* recognized the influence of fiber spacing and sizing of the paper, Andrews *(3)* the viscosity of the penetrating oil. Larocque *(4)* studied the filtration of oils through paper under pressure and investigated the influence of the viscosity and surface tension. The initial phase of oil absorption was deemed the most important. Nash *(5)* described a modification of the oil flotation method whereby 1 drop of linseed varnish was used. Reed *(6)* found that the initial oil penetration does not furnish the information required about paper absorbency but states that the complete saturation time is more satisfactory. Others *(7, 7a)* have studied oil penetration. All these investigations dealt with the influence of the paper structure on penetration speeds of a standard vehicle.

A contribution to ink penetration proper has been made by Bekk *(8)* who removed the excess ink from printed stock after varying short periods of time and marked as "penetrated" ink the difference in weight between ink quantities applied and removed. As a scientific method of investigation, Bekk's penetration test fails, since both the printing pressure and the pressure exerted on the ink film by removing the ink excess between paper rollers cause ink penetration far beyond the quantity penetrated without outside pressure.

Albrecht *(9)* has carried out a number of investigations of ink penetration with Bekk's apparatus. The results obtained suffer from the limitations of the method while no fundamental relationships were uncovered. Wehmhoff *(10)* measures the number of sheets of paper penetrated by a drop of ink in a definite period of time of at least several hours. This method is rather crude and unreliable.

Dodge and Tarvin *(11)* determined photoelectrically the change of reflection with time of a paper surface while ink was penetrating from the reverse side. They stated that the time necessary to obtain a definite change in reflection is indicative of the speed of ink penetration. While the authors had built an excellent research tool, they did not publish any use of their instrument for more fundamental investigations and did not report any basic relations between ink properties and penetration speed. The main idea of the instrument described by Dodge and Tarvin was incorporated in the so-called News Penetration Tester *(12)*, a commercially available instrument, which basically determines only the end point or a single desired in-between point of the reflection changes of a paper surface due to ink penetration from the reverse side. Thus this instrument enables only the determination of ink penetration as a "glorified" flotation test.

Theoretical Considerations

In actual printing a thin film of ink is deposited on paper and part of the vehicle penetrates into the

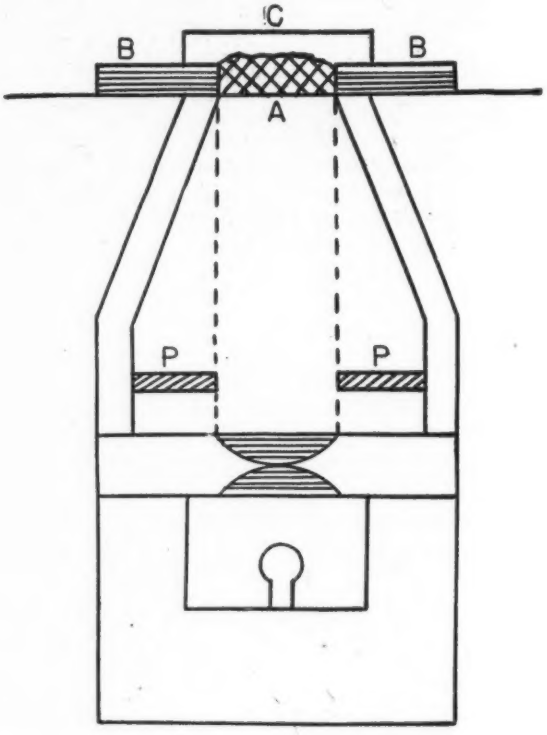

FIG. 1

* Presented at the Annual Meeting of the Technical Association of the Pulp & Paper Industry, Hotel Commodore, New York, N. Y., Feb. 25-28, 1946.

[1] J. M. Huber, Inc., Research Department, New York, N. Y.

paper stock. This vehicle portion moves quickly through the entire paper depth, even with heavier papers. This can be seen easily with ultraviolet light which causes fluorescence of the vehicle. Even with fairly heavy stock printing becomes visible on the reverse side.

Consequently it is necessary to study the penetration of a vehicle through the entire paper thickness and the surface penetration alone is insufficient to obtain a satisfactory picture of the penetration phenomenon.

When a drop of ink is deposited on absorptive paper, capillary forces will separate the vehicle from the pigment and force the vehicle into capillary interstices between the paper fibers. After a relatively short time interval vehicle parts have reached the reverse side which fact becomes visible by the appearance of a dark spot on the paper surface caused by a change in the light reflection of the paper. This is a result of the replacement of air by ink vehicle in the paper capillaries, causing the vehicle-wet spot to become more or less transparent, allowing light to pass through the paper instead of reflecting it.

More and more vehicle is then being transported through the paper capillaries, which becomes apparent by the gradual increase of the vehicle-wetted surface. Finally the vehicle transport stops at the complete saturation point. If outside pressure is exerted, actual ink filtration may occur.

Since the saturation of the paper surface with vehicle causes a very considerable and definite decrease in paper reflection, it is obvious that the change in reflection in a small time interval must be proportional to the penetration speed. Consequently it is very important to establish the reflection-time curve, since the slope of the tangent at each point, representing the differential quotient of the reflection-time function, is thus proportional to the penetration speed. Where no absolute speeds are measured but only comparative values, the units may be chosen in such a way that the slope of the tangent of the reflection-time curve becomes equal to the speed of penetration at each point.

Experimental

A very accurate way of measuring the reflection of a surface is by means of a photoelectric reflectometer. In the photovolt reflectometer, in part indicated in Fig. 1, light passes through an optical system and is cast as a parallel beam upon the surface to be measured. While the directly reflected light is thrown back through the system and dissipated, the diffusely reflected light falls upon photocell P and its intensity is measured with the aid of a very sensitive galvanometer.

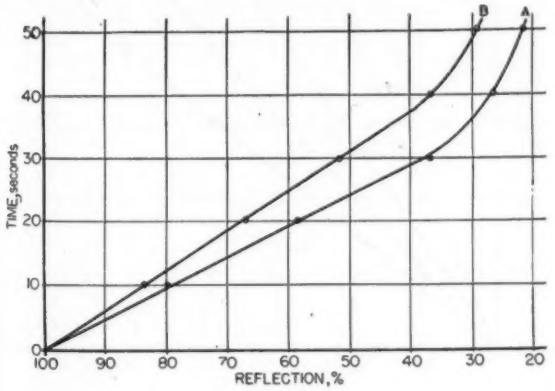

FIG. 2

At the start of the operation the galvanometer deflection is set, by means of a resistance in a shunt, to its maximum deflection as caused by reflection from the paper surface A, held in place by ring B.

Care is taken to prevent the influence of outside light sources by covering the paper with an opaque cover C, dull black inside. A definite volume of ink, sufficient to fill up the space between ring and paper, is now deposited on the paper surface and the change in photo current with time is marked. The result obtained is a reflection-time curve.

By using an automatic recorder with inking device, together with an amplifying system, the measurements could be made "fully automatic" and without the error of observation. These data, however, were obtained by reading the reflection values at every 10 seconds time interval.

Table I and Fig. 2 show the result for two different inks, A and B, on paper stock No. 1.

TABLE I.—REFLECTION-TIME

Time, seconds	Ink A	Ink B
10	80	82
20	59	67
30	37	53
40	27	37
50	22	30
60	20	24
70	19	22
80	18	20
90	17	19
100	16	18

It is observed that the reflection-time curve is perfectly linear for the greater part while near the saturation point the expected change of the course of the line is observed. Thus it is obvious that during the period of penetration the speed of penetration is constant while only at the end the speed decreases and finally the penetration comes to a stand still.

The speed of penetration is therefore indicated by the slope of the linear part of the curve (Table II), where cotangent values have been given, to make the higher values correspond with the speedier penetration.

TABLE II.—INK PENETRATION SPEED ON AN ABSORBENT PAPER

Ink	Penetration Speed (Cotangent)
Ink A	2.13
Ink B	1.61

This quite uniform penetration is found in general with many inks and papers and the slopes of the reflection-time curves for each paper-ink combination accurately indicates the speed of penetration.

Influence of the Paper

STANDARD INK WITH VARIOUS PAPER STOCKS.

A series of paper stocks were tested with ink A.

TABLE III.—PENETRATION OF INK A ON VARIOUS PAPERS

Time, seconds	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7
0	100	100	100	100	100	100
10	90	93	88	75	86	79
20	80	87	77	50	71	59
30	70	81	62	30	54	41
40	57	77	46	22	40	29.5
50	47	70	36	20	30	23
60	37	64	29	18	24	20
70	30	59	25	17	20.5	18.5
80	27	53	23	16.5	19.5	17
90	23	48	21.5	16	18.5	16
100	21.5	43	21	..	18	15.5

Thus it can be seen that, although a great variety exists in penetration speeds of one ink in various papers, the type of the reflection-time curve is identical in all cases.

The slopes of the linear part of the lines, denoting

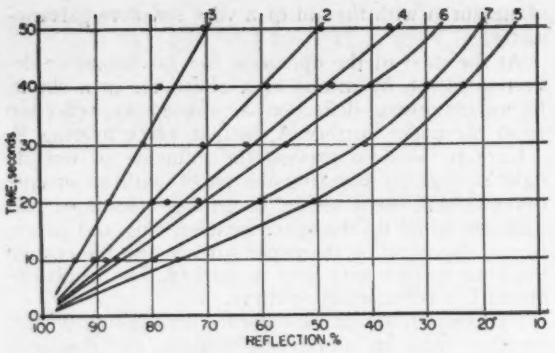

FIG. 3

the penetration speed values for each paper-ink combination, are given in Table IV.

TABLE IV.—PENETRATION SPEED OF INK A ON VARIOUS PAPERS

Paper No.	Penetration Speed
2	0.99
3	0.63
4	1.27
5	2.50
6	1.47
7	1.96

For a comparison between ink and vehicle penetration, a very viscous vehicle was made up by mixing 60 parts by weight of castor oil with 40 parts by weight of a blown castor oil, the mixture having a viscosity of 30 poises at 80°F. Penetration speed data with various paper stocks are given in Table V and repeated in Fig. 4.

TABLE V.—STANDARD VEHICLE PENETRATION ON VARIOUS PAPER STOCKS

Time, seconds	No. 3	No. 4	No. 5	No. 8
0	100	100	100	100
10	96	93	90	88
20	89	86	80	74
30	86	79	71	61
40	81.5	72	63	50
50	76	65	54	41
60	72	58	47	34
70	66	52	41	30.5
80	62	46	36	28
90	57	42	33	26
100	53	38	30	25

It may be observed that reflection-time curves seem quite similar in character to those of the inks. Penetration speeds, as represented by the slopes of the linear part of the curves are given in Table VI.

TABLE VI.—STANDARD VEHICLE PENETRATION SPEEDS IN VARIOUS PAPER STOCKS

Paper, No.	Penetration Speed
3	0.47
4	0.71
5	0.99
8	1.32

On quantitative observation it is noticed that the penetration speeds for the ink in the papers Nos. 3, 4, and 5, roughly as 1:2:3, while those for the vehicle compare in the same papers as 1:1.5:2, showing that inks behave fundamentally different from vehicles and giving again evidence of the fact that no quantitative conclusions about ink penetration can possibly be derived from a study of oil penetration.

INFLUENCE OF DIFFERENT SIDES OF THE PAPER.

As is generally known, marked differences exist in ink penetration speed when comparing felt and wire sides of a paper stock.

Figure 5 indicates the reflection-time curve for ink A and a paper stock, using both sides. It can be found that the felt side penetration speed, as represented by the slope of the reflection-time curve is 1.73, while the wire side penetration speed is 2.00; an increase of 15.5%.

REPRODUCIBILITY OF RESULTS.

From a series of experiments it became evident that commercial paper stocks do not exhibit a uniformity of structure over larger areas. While it is possible to obtain consistent results with the same ink or vehicle on a single sheet of paper only in spots located quite near to each other, it was found that paper characteristics sometimes may change considerably at spots even as little as 5 inches away from the reference spot and great variations were found both with inks and vehicles.

While for one desirous to study various papers it is rather easy to use a standard ink or vehicle, it appeared to be more difficult to find a paper stock which can be considered of consistent properties in its various parts. A series of tests with commercial printing paper stocks made it quite clear that no reproducible penetration speed is to be obtained with any of these papers by means of the described method even with humidity and temperature control. Since a suitable standardized paper would be helpful, other types of paper were studied.

It was found that a hardened fiber paper, Whatman No. 50, showed excellent reproducibility and with several hundred circles tested from various shipments, consistent results were obtained. This is not quite so surprising as it seems since in the manufacture of filter paper all efforts are directed towards the reproducibility of its "filtering" characteristics, which are, of course, identical to penetration characteristics.

Figure 6 shows the reflection time date of four inks A, B, C, and D on Whatman No. 50 filter paper, and it is peculiar to notice that here in the initial period the reflection-time relation is not linear, but after a short period of time linearity is obtained until saturation occurs. This result, consistently observed with Whatman filter paper, though not with printing papers, might indicate that although the structure of the filter paper over wide areas may be uniform, this uniformity apparently is not reached with respect to the microscopic structure and a few wider capillary interstices might be present which could account for the initial rapid change in penetration speed. This in constrast to many other paper stocks which appear to be microscopically quite uniform as witnessed by the linear change of reflection

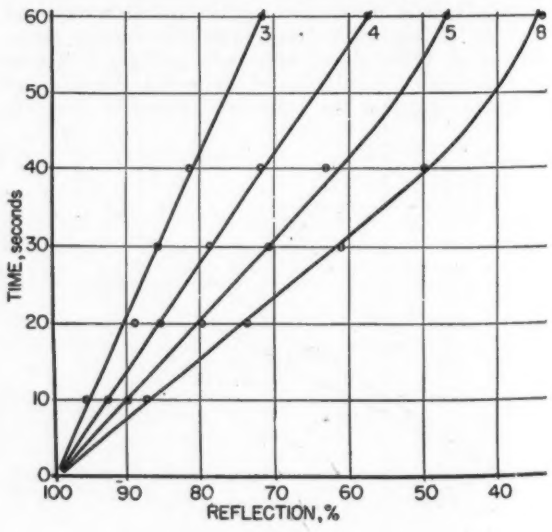

FIG. 4

with time at the very start of the penetration period. In both cases, however, the slope of the linear part of the curve must be taken as the penetration speed. The penetrations speeds of the various inks, as indicated by the slopes of the lines of Fig. 6, are given in Table No. VII.

TABLE VII.—INK PENETRATION SPEEDS IN WHATMAN NO. 50 PAPER

Ink	Penetration Speed
Ink A	1.27
Ink B	1.06
Ink C	1.03
Ink D	1.36

Comparisons between these values are the most accurate figures available for a comparison of their actual penetration speeds because of the reproducibility of data.

Influence of Ink

Ink Vehicle

Uniformity of Penetrating Liquid. Ink vehicles are usually made up of various oils and resins. It has often been suggested that a vehicle comprising various constituents does not penetrate as a single liquid but that capillary flow through the paper stock might tend to separate low-viscous parts from the vehicle, allowing these materials to penetrate first, causing high-viscous oils and resins to remain on the top of the paper surface, a process which resembles chromatographic separations. This question can be answered definitely by means of penetration speed measurements. To study this, a vehicle had to be chosen the penetration speed of which was slow enough to be measured accurately and which preferably also consisted of a mixture of not more than two kinds of molecules.

A purified sample of bis (alpha phenylethyl) phenol, boiling at 378°C. was fractioned carefully as to contain only materials distilling sharply at one temperature (224°C.) at 6 mm. pressure. The resulting product was a colorless very viscous oil.

A purified sample of ortho alpha phenylethyl phenol boiling at 312°C. was also carefully fractionated and contained only materials distilling sharply at one temperature (158°C.) at 6 mm. pressure. A nearly colorless, free-flowing liquid was obtained.

It was found that the ortho alpha phenylethyl phenol penetrated extremely rapidly in the Whatman No. 50 standard paper while the bis (alpha phenylethyl) phenol penetrated only very slowly. A mixture was now made up containing 20% by weight of the ortho compound and 80% by weight of the disubstitute. This mixture was spread in a very thin layer on absorbent paper. After allowing penetration to take place, the remaining liquid was scraped off the paper while the penetrated liquid was extracted with petroleum ether, after which the solvent was removed by evaporation. Penetration speed tests with standard paper were now carried out with the original mixture, the scraped-off liquid and the extract.

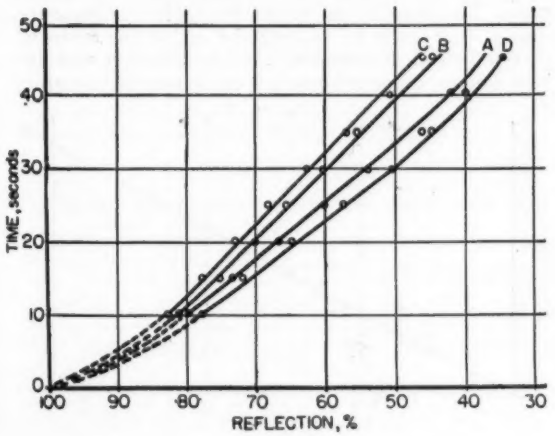

Fig. 5

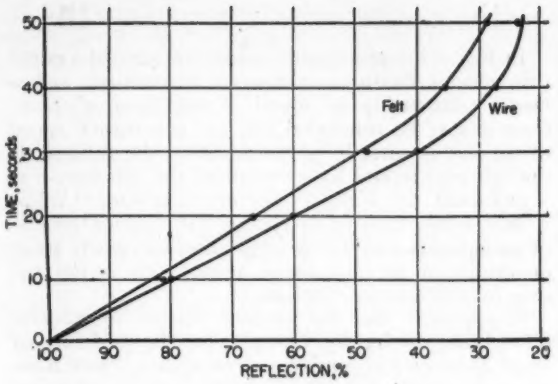

Fig. 6

The penetration speeds measured were found to be exactly the same, showing that the mixture penetrated as a single compound, without any separation whatsoever of the constituents. Similar results were found with inks and vehicles comprising mineral and drying oil mixtures.

Consequently it is apparent that in ink compositions a homogenous vehicle penetrates as a uniform liquid without speration into components. It appears therefore necessary to study the vehicle in its entirety without regard to the component parts to determine its penetration qualities.

Vehicle Coloration. Since the surface reflection changes are taken as a measurement of the penetration speed, it might be thought that a dark-colored vehicle would appear to penetrate more quickly than a light-colored vehicle of the same penetration characteristics because of differences in reflection of lighter and darker surfaces.

Actually, however, this is not the case. The presence of vehicle in the paper capillaries causes the paper to be transparent and to loose its reflection qualities. With light-colored vehicles the light passes through the paper and becomes finally absorbed either in the pigment film or, with pure vehicles, is absorbed by the dull-black cover. With darker vehicles light absorption occurs already partly in the vehicle.

It was found experimentally that with vehicles colored artificially with a dye to a high degree of coloration, only slight differences were found in penetration speed as compared with the uncolored vehicles. Thus it is evident that vehicle coloration does not interfere in a marked way with penetration measurements.

Vehicle Viscosity. A series of inks were made up consisting of a constant percentage of carbon black dispersed in mineral oil vehicles of varying viscosity. The surface tensions of these liquids, as measured with a Du Nouy tensiometer, appeared to be practically identical. Table VIII shows penetration speeds of the inks and viscosities of the vehicles.

TABLE VIII.—PENETRATION SPEED AND VEHICLE VISCOSITY

Vehicle Viscosity in Poises at 80° F.	Penetration Speed
0.40	3.80
0.60	2.85
0.98	1.85
1.50	1.02

2.52	0.54
4.27	0.40

In Fig. 7 the penetration speeds are plotted against the vehicles fluidities (reciprocal viscosities) and a linear relationship is found. From these observations it may be concluded that the penetration speed of an ink is directly proportional to the fluidity of the ink vehicle and independent of the ink viscosity.

Influence of Vehicle Surface Tension. While it is a simple matter to change the surface tension of an aqueous solution by addition of extremely small quantities of surface active agents, this is not the case in nonaqueous solutions.

It appeared that the surface tension of mineral oil vehicles is hardly changed by the addition of small quantities of surface active agents. From measurements with the aid of a Du Nouy tensiometer it was found that quantities up to 2% of agents such as sulphonated oils, fatty acid amines, soaps, fatty alcohol sulphates, aerosols, etc. did not change the surface tension more than a small fraction. Thus it appeared to be impossible to determine the influence of the surface tension with any degree of accuracy using surface active agents.

In an attempt to find a solution to this problem, inks were made up using a mineral oil, triethanolamine, as well as glycerine as the main part of an ink vehicle. The glycerine used, of a technical grade, had a viscosity of 5.0 poises at 80°F. The viscosity of the triethanolamine was adjusted to the same viscosity by the addition of small quantities of monoe-

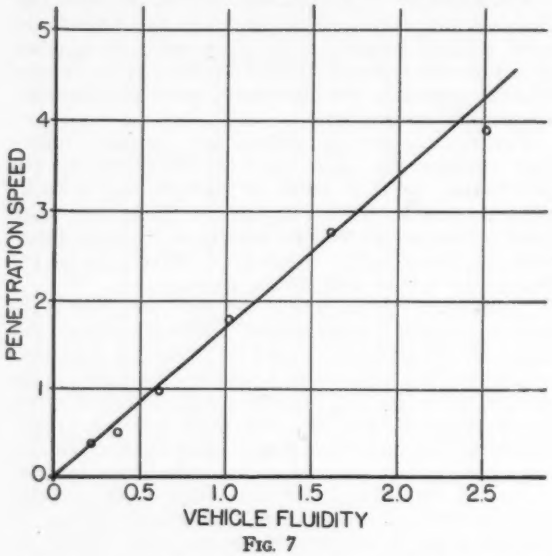

Fig. 7

ethanolamine while the mineral oil vehicle was also adjusted to the same viscosity.

Table IX shows the result of the penetration speed measurements made with inks containing identical concentrations of carbon black ground in the respective vehicles.

TABLE IX.—PENETRATION SPEED AND VEHICLE SURFACE TENSION

Vehicle	Penetration Speed	Surface Tension, dynes/cm.
Mineral oil	0.43	35
Ethanol amines	1.06	48
Glycerine	0.90	60

The filter paper used (Whatman 50) was entirely unsized.

From the data it can be seen that no direct connection seems to exist between ink penetration speed

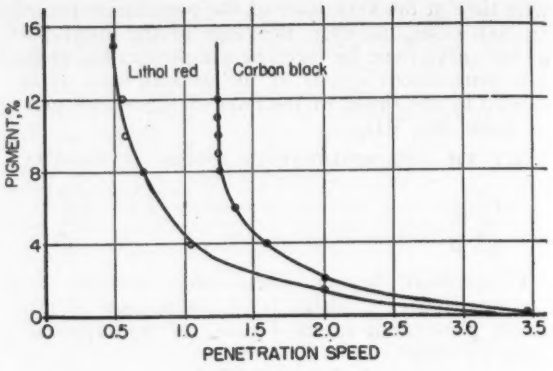

Fig. 8

and vehicle surface tension. Since on penetration pigment and vehicle have to be separated, complicated exchanges occur, involving energy exchanges between various surfaces and it may therefore not be very surprising that a simple relationship between vehicle surface tension and ink penetration speed was not found.

Pigment

A series of inks were made using a mineral oil vehicle and pigments in varying concentrations, the penetration speeds of which were determined. Figure 8 shows the result for carbon black and lithol red. It is observed that for both pigments the penetration speed decreases rapidly on pigment incorporation, until a pigment concentration of about 6% has been reached after which the penetration speed shows only a slight decrease (lithol red) or remains practically unchanged (carbon black) notwithstanding the fact that the dispersions examined varied from extremely fluid to very viscous plastics.

Similar results were obtained with other pigments and with different vehicles showing only a variation in the concentration at which the constant penetration level was reached.

Influence of Temperature

Penetration speeds were measured for ink A on standard Whatman filter paper at various tempera-

TABLE X.—TEMPERATURE AND PENETRATION SPEED

Temperature, ° F.	Penetration Speed
62	1.03
70	1.75
78	1.95
90	2.53
100	3.80
110	4.20

tures. The results are given in Table X. Measurements were made by heating the ink at the temperature indicated, whereupon a penetration test was carried out on standard test paper, hence the accuracy

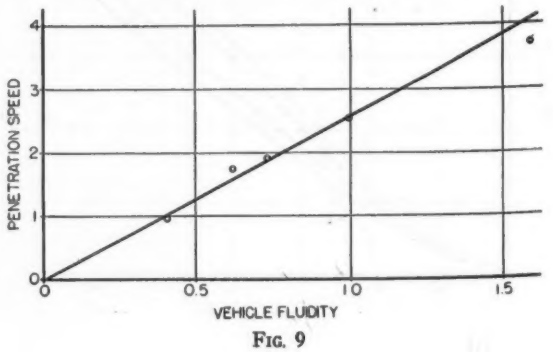

Fig. 9

obtained is not very great.

On plotting the penetration speed against vehicle fluidity at the temperature indicated a linear relation occurs.

Thus it is apparent that the penetration speed of an ink at varying temperatures is proportional to the vehicle fluidity at each temperature as may be expected from analogy with the influence of vehicle fluidity on penetration speed at one temperature.

In conclusion, results obtained with the method described above have proven to be in complete agreement with practical experience.

Summarizing, penetration speed of inks into paper may be accurately determined with the described method. As a standard paper, Whatman No. 50 filter paper is recommended because of inconsistent results found with many commercial printing papers. Vehicle fluidity was found to be the determining factor in ink penetration and its temperature effect is completely governed by vehicle fluidity. In practical inks the pigment concentration hardly effects the penetration speed, but inks and ink vehicles behave fundamentally different on penetration into paper. Finally, complex but homogeneous vehicles penetrate as a single liquid.

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Blocking Resistance of Paper and Flexible Materials*

TAPPI Tentative Standard T 477 m-46

This method of test applies to flexible types of packaging materials, including paper, metallic foils, and synthetic films or foils, and the impregnated, coated, and/or laminated combinations which may be produced therefrom. The method provides a range of standard conditions of temperature and relative humidity at constant pressure for a given time which is designed to duplicate varying climatic conditions which may be encountered in the manufacture, storage, transportation, or use of packaging materials.

Definitions

Blocking is defined as that degree of cohesion or adhesion between contiguous layers of similar or dissimilar packaging materials in roll or sheet form which prevents their being satisfactorily and efficiently used.

Conversely, the ability of a given material to resist the blocking effects of temperature, pressure, and relative humidity may be considered as a positive attribute of that material which is designated as Blocking Resistance.

Apparatus

1. *Oven.* A constant-temperature oven which can be maintained at temperatures from 80 to 150° F. (27° to 67° C.) within ± 2° F. (1° C.)

2. *Desiccator* (for use as humidity chamber). Minimum diameter 6 inches (152 mm.). Ground glass edges should be perfect, clean, and freshly lubricated with stopcock grease.

3. *Clamping Surfaces.*

(a). Bottom support surface: 4 by 4 inch pieces of plate glass, or metal plates with flat upper surface.

(b). Top pressure surface: four brass weights with flat under surfaces, or four suitably weighted pieces of plate glass, whose base area is not less than 1.5 nor more than 3 square inches. Each weight shall weigh 8 pounds ± 1 oz. (3629 ± 28 grams) to yield a pressure of 0.5 pound per square inch on the bottom support surface.

4. *Interleaving Material.* Thin, hard-surfaced paper or thin metal foil cut 1¾ by 2¼ inches.

Test Specimen

Cut eight specimens, each 1¾ by 2¼ inches, from each sample for each set of test conditions used.

Test Conditions

One or more of the following sets of conditions shall be used to test for blocking. Selection of the proper conditions will depend upon the type of material tested and the actual conditions which are liable to arise during storage and use of the material. In any case the temperature selected shall be below the softening point of the coating. (If the test temperature used is higher than the softening point of the coating, materials, such as wax, may soak into the base sheet and thus give no adhesion.)

Dry Bulb Temperature, ° F.	° C.	Relative Humidity, %	Pressure, p.s.i.
100	38	75	0.5
120	49	75	0.5
140	60	75	0.5
100	38	44	0.5
120	49	44	0.5
140	60	44	0.5

Note: A tolerance of ± 2° F. (1° C.) is allowable in the temperatures listed.

The desired relative humidity condition is obtained by using a saturated solution of the proper salt in distilled water in the presence of an excess of the solid phase. Place the solution in the base of the dessicator for this test, using C.P. sodium chloride to achieve 75% relative humidity, and C.P. potassium carbonate to obtain 44% relative humidity.

* This method has been approved as a tentative standard by the Packaging Materials Testing Committee. Criticisms are earnestly requested and should be sent to R. G. Macdonald, Secretary, Technical Association of the Pulp and Paper Industry, 122 E. 42nd St., New York 17, N. Y. Reprints of this standard may be obtained from the Secretary at 25 cents each.

Procedure

Condition the test specimens for at least 1 hour prior to test under the conditions specified in TAPPI Standard T 402 m. Also condition the apparatus, including the desiccator containing the proper salt solution, and the pressure surfaces after assembly, for at least 1 hour in the test oven which has been previously adjusted to the desired temperature. When the desiccator is warmed, open its lid for a few minutes, then close the lid until the specimens are ready for insertion.

Stack the conditioned test specimens and pressure media on the shelf of the disiccator in the following sequence:

4 by 4 inch bottom plate
interleaving paper or foil
four test specimens
interleaving paper or foil
four test specimens
brass weight or weighted glass plate

A 6-inch diameter desiccator will permit four samples to be tested in duplicate at one time. Locate each stack in a quarter section of the bottom plate so that individual stacks do not overlap and so that the test areas are completely supported by the bottom plate.

Stack specimens having faces of different characters so that the three possible surface combinations, face to face, face to back, and back to back, are tested. In this case, stack the two sets of four test specimens in the following sequence:

interleaving paper
one specimen, face up } (face to face)
one specimen, face down }
one specimen, face down (face to back)
one specimen, face up (back to back)
interleaving paper
four test specimens as above
interleaving paper
brass weight or weighted glass plate

Place the desiccator containing the assembled test stacks in the oven. Let the lid of the desiccator remain partially open for 15 minutes then slide it shut. Leave the desiccator in the oven at the desired temperature for 24 ± 1 hours. Then take the desiccator from the oven, carefully remove the brass weights or weighted glass plates from the test stacks and take each stack from the desiccator. Gently lay the stacks of test specimens down in the room (preferably at 73°F. and 50% relative humidity) for ½ hour, then examine by slipping or peeling the sheets apart and rate for blocking resistance as follows:

Blocking Resistance	*Criteria*
No blocking	No adhesion or cohesion between contiguous surfaces, which slide freely upon one another. Surfaces of specimens are not marred.
Slight blocking	Slight adhesion. Adjacent surfaces do not slide freely, but will with frictional pressure. Surface may or may not show a very slight evidence of marring.
Considerable blocking	Adhesion or cohesion of contiguous surfaces. Layers may be separated with difficulty. Surfaces will be marred or partially destroyed. Paper base materials will show loss of fiber. Synthetics may or may not display surface mar.
Complete blocking	Blocking to the extent of a complete seal or weld between adjacent surfaces which cannot be separated without destruction of the test specimen.

Report

The report shall include the name and type of material, the rating of blocking resistance, including a brief description of blocking found, the temperature, relative humidity, and pressure used. If dissimilar surfaces exist on the test specimen, report the blocking of the three possible surface combinations.

TAPPI Notes

H. P. Carruth, formerly vice president of the Union Bag & Paper Corporation, New York City, is now a consultant with a temporary address at The Lord Jeffery, Amherst, Mass.

Stanley Fifield is now mill superintendent of the Wood Flong Corporation, Hoosick Falls, N. Y.

Ronald G. Goodwin, formerly pulp and paper chemist, Solvay Process Co., Syracuse, N. Y., is now technical service representative, Paper and Industrial Appliances, 122 East 42nd St., New York 17, N. Y.

Frederick S. Van Voorhis, formerly of the Diamond Mills Paper Company, is now consulting engineer at Saugerties, N. Y.

Sydney Coppick, formerly of the National Research Council, is now in the research laboratory of the American Viscose Corporation, Marcus Hook, Pa.

German for the Scientist

The Chemical Publishing Company has just issued "German for the Scientist" by Peter F. Wiener of Rugby School in England. In a foreword by Paul Spoerri of the Polytechnic Institute of Brooklyn he mentions that it was a pleasant surprise to find this book and to be able to recommend it to his students. Nearly all of the reading matter has been selected from modern literature, giving passages from the works of the most prominent chemists and physicists of the present time.

The grammer is condensed into ten short lessons, making it of value to many who cannot attend classes but would like to acquire a working knowledge of the language through self-study.

A refresher course such as is provided by this book should enable the average technical man to feel competent to read much of the German technical literature that is becoming available. It is the aim of this small book (238 pp. 5 x 7½) to give the user a reading knowledge of German. The translations of many of the short articles are contained in the back of the book. These are included to assist the reader in his translations but in such a way as to limit the temptation to depend too much on this guide.

Copies may be obtained from the Book Department of the Technical Association of the Pulp and Paper Industry, 122 East 42nd Street, New York 17, N. Y. at $3.50 per copy.

Week's Record of Trends in The Paper and Pulp Market

Office of the PAPER TRADE JOURNAL,
Wednesday, June 12, 1946.

Over-all paper and paperboard production for 1946 is expected to exceed 18,000,000 tons despite strikes and other adverse conditions. Trade reports indicate that the paper raw material supply outlook has changed for the better in recent weeks, and will act to stimulate production in coming months. Pulp and paper production in April held at the record level set in March. The differences in output by grades between March and April were insignificant. The greatest change occurred in building paper, in which April output exceeded March by 7,000 tons. April pulpwood receipts were lower in the Northeast, Lake States and Pacific Coast regions, where reduced receipts are usual at this time of the year. Pulpwood consumption, however, was almost identical with the March record. Despite these withdrawals, inventories were still at levels comparable with those of the war years, although considerably below normal prewar levels. April receipts of fibrous materials other than wood pulp were above March records. Inventories at the end of April were generally in better condition than in March.

Trade reports further point out that waste paper collections have held to impressive levels as a result of increased supplies of recoverable and salvagable paper in this country. While there may be some falling off in collections during the summer months, a seasonal occurrence, hope is expressed that receipts may be maintained at levels which will assure to a great extent continued production of sorely needed paperboard products. Adding to the anticipated improvement in supplies of domestic and imported fibrous raw materials the fact that additional machinery and equipment are available, trade quarters feel that production has a good chance of rising above the 18,000,000 ton figure. In any event, paper sales by wholesalers are running well above last year's levels for the corresponding period, and it is emphasized that production is being moved into distribution channels as rapidly as facilities, raw material supplies and conditions in other industries permit.

The index of general business activity for the week ended June 1 rose to 116.0 from 111.3 in the previous week, compared with 142.2 for the corresponding week in 1945. The index of paperboard production rose to 164.7 from 158.3 in the previous week- compared with 162.7 for the corresponding week in 1945.

Paper production for the week ended June 1 was estimated at 96.3 per cent, compared with 99.2 for the preceding week, with 87.9 for the corresponding week in 1945, with 86.1 for 1944, with 85.5 for 1943, and with 90.2 per cent for the corresponding week in 1942.

Paperboard production for the week ended June 1 was 85.0 per cent of capacity, compared with 93.0 per cent for the preceding week, with 93.0 for the corresponding week in 1945, with 93.0 for 1944, with 92.0 for 1943, and with 69.0 per cent for the corresponding week in 1942.

WOOD PULP

There is still no definite information as to how much Swedish and Finnish pulp we may expect this year. Total imports of Scandinavian wood pulp through May 9 were 203,737 tons, 177,791 tons from Sweden and 25,946 tons from Finland. This movement from Finland is encouraging and leads to the belief that Finnish tonnage may exceed 100,000 tons in 1946. Swedish shipments, on the other hand, must be more than 500,000 tons in the remainder of the year in order to achieve trade estimates of 700,000 tons or more for 1946.

Exports of pulp from Canada were higher in April which adds to the greater optimism felt regarding pulp despite the uncertainties about European supply. It must be remembered, however, that while greater domestic production may mean better supply for integrated mills it is no guarantee for converting mills.

RAGS

Rag shipments to mills are enough to keep stockpiles up with some eastern mills able to increase their stocks. More foreign rags have been sold at $70 dock. Egyptian whites were offered at 4.50c dock.

Domestic heavy wipers remain at $50 to $55; No. 1s and 2s regular stock at $31 and $29 shipping point plus brokerage.

OLD ROPE AND BAGGING

Market for old rope is slow with importers still unable to come to terms with shippers overseas on the so-called Manila rope, and refuse to pay more than 4.75c for sisal. Some mills take the sisal with the hope that a bit of Manila will be included in the shipment. Waste jute strings remain around 5 to 5.50c, and hard jute at 3.50 to 4c.

Market for old bagging is relatively quiet. Dealers are shipping against old orders. Many old contracts are unfilled and considerable bagging will be shipped against them this month. Prices remain unchanged with No. 1 mill run bagging and No. 1 old gunny at 3.75c, No. 1 scrap burlap at 3.00 to 3.25c per pound.

WASTE PAPER

Waste paper continues to move slowly out of New York and other collection centers into mill channels this week. The market is holding fairly well, but there are weak spots that have been in evidence for some time. Some consumers are reported receiving lower-grade folded news at reduced prices.

New England reports a much firmer demand for corrugated. Renewed demand despite diminishing coal supplies is rather good evidence that no one is badly loaded with well sorted and well baled paper. Book stock continues to be in the buyers market, with the latter indicating what they will and will not accept. Mills in several sections of the country report a very steady market for books.

OPA Increases Ceiling on Strawboard Corrugating

WASHINGTON, D. C. — Manufacturers' ceiling prices for strawboard corrugating material have been increased seven cents per thousand square feet in a move to stimulate greater production, the Office of Price Administration announced this week. The new ceiling, effective June 15, 1946, is $1.07 per thousand square feet. In 1941 the price was 96 cents. This was increased in September 1945 to $1.

Strawboard corrugating material is sold to converters for use in making shipping containers. Converters will absorb the increase, as no change is made in existing container ceilings.

OPA said that continuing price rises for straw, which is exempt from price control, had caused a diversion of production from strawboard to other, more profitable types of paperboard. Today's action is designed to arrest this diversion and encourage needed strawboard production.

Waste Dealers Ponder OPA Edict

CHICAGO—The Office of Price Administration, it is reported, failed to pick up any appreciable number of friends in the Chicago area this week with its notice that no change in the differential applicable to the ceilings on ten grades of wastepaper is even contemplated at this time. This means that the $5 differential applicable to these ten grades is to retain its status quo. Of these ten grades, according to the OPA, ceiling prices have been, since September, 1944, $5 a ton higher when the paper is packed in bales of 500 pounds or more than when otherwise packed or loose. The ten grades are No. 1 mixed paper, No. 1 news, overissue news, old corrugated containers, extra Manilas, mixed books, No. 1 heavy books and magazines, No. 1 mixed ledger (colored ledger) No. 1 white ledger and mill wrappers.

Paper and Paper Stock Imports At New York and Other Ports

NEW YORK IMPORTS

WEEK ENDING JUNE 8, 1946

SUMMARY

Newsprint .....6,845 rolls
Filter Paper .....23 cs.
Wrapping Paper .....680 rolls
Drawing Paper .....2 cs.
Kraft Paper .....374 rolls
Photo Paper .....1 cs.
Tracing Paper .....65 cs.
Miscellaneous Paper .....626 bls.

NEWSPRINT

H. G. Craig Co., A.C.D., Donnacona, Que., 400 rolls.
H. G. Craig Co., Donpaco, Donnacona, Que., 382 rolls.
N. Y. Journal American, Markland, Liverpool, N.S., 892 rolls.
N. Y. Tribune, Markland, Liverpool, N.S., 1482 rolls.
N. Y. World Telegram, Markland, Liverpool, N.S., 606 rolls.
Brooklyn Eagle, Markland, Liverpool, N.S., 764 rolls.
Herald Statesman, Inc., Markland, Liverpool, N.S., 73 rolls.
Richmond Newspapers, Inc., Markland, Liverpool, N.S., 1485 rolls.
H. G. Craig Co., G.T.D., Donnacona, Que., 374 rolls.
H. G. Craig Co., Newscarrier, Donnacona, Que., 387 rolls.

FILTER PAPER

H. Reeve Angel & Co., Inc., Fort Ticonderoga, London, 23 cs.

WRAPPING PAPER

Penson & Co., Beatrice, Rauma, 680 rolls.

DRAWING PAPER

H. Reeve Angel & Co., Inc., Fort Ticonderoga, London, 2 cs.

KRAFT PAPER

Cohoes Envelope Co., Goonawarra, Gothenburg, 374 rolls.

PHOTO PAPER

J. J. Gavin Co., Fort Ticonderoga, London, 1 cs.

TRACING PAPER

E. Dietzgen & Co., Examiner Marseilles, 39 cs.
Borden Riley Paper Co., Examiner, Marseilles, 26 cs.

MISCELLANEOUS PAPER

Sharp Exports, Lt., Goonawarra, Gothenburg, 48 bls.
Gurge & Co., Goonawarra, Gothenburg, 578 bls.

RAGS, BAGGINGS, ETC.

Swiss Bank Corp., Cable Eye, Vera Cruz, 4 bls. woolen rags.
S. Godfrey, Cable Eye, Vera Cruz, 3 bls. woolen rags.
C. Kutz, Wild Rover, Fortaleza, 76 bls. cotton waste pickers.
Padawer & Co., Wild Rover, Fortaleza, 178 bls. cotton picker waste.
F. B. Vandergrift & Co., Wild Rover, Fortaleza, 99 bls. cotton picker waste.
C. Kutz, Wild Rover, Fortaleza, 135 bls. cotton picker waste.
The Heyman Co., Wild Rover, Fortaleza, 112 bls. cotton linters.
New England Waste Co., Binghampton Victory, Buenos Aires, 51 bls. picker waste.
McKay & Co., Samuel Nelson, Calcutta, 100 bls. cotton waste.
O'Brien Trading Co., Samuel Nelson, Calcutta, 100 bls. cotton waste.
Southern Waste Co., Samuel Nelson, Calcutta, 100 bls. cotton waste.
Guaranty Trust Co., Fort Ticonderoga, London, 121 bls. rags.
A. W. Fenton, Fort Ticonderoga, London, 28 bls. new linen cuttings.
Tradesmans National Bank Trust Co., Fort Ticonderoga, London, 256 bls. rags.
Williamson Products Co., Highland Prince, Buenos Aires, 265 bls. cotton waste.
New England Waste Co., Highland Prince, Buenos Aires, 239 bls. cotton linters, 42 bls. cotton thread waste.
Seldner Corp., Highland Prince, Buenos Aires, 398 bls. cotton linters.
American Cotton Products Co., Highland Prince, Buenos Aires, 260 bls. cotton waste.
New England Waste Co., Highland Prince, Buenos Aires, 507 bls. cotton waste pickers, 203 bls. linters motes.
Royal Manufacturing Co., Highland Prince, Buenos Aires, 9 bls. cotton picker waste, 34 bls. cotton waste, 56 bls. cotton thread waste.
Schimmel Trading Corp., Highland Prince, Buenos Aires, 25 bls. cotton picker waste.
Roverside Mills, Highland Prince, Buenos Aires, 334 bls. cotton waste.
Simmons Co., Highland Prince, Buenos Aires, 617 bls. cotton linters.
Swiss Bank Corp., Examiner, Piraeus, 291 bls. old dark cottons, 151 bls. old linseys.
Bank of Nova Scotia, Examiner, Piraeus, 288 bls. dark cotton rags.

OLD ROPE

P. J. Schweitzer, Samuel Nelson, Calcutta, 457 bls. old hemp rope cuttings.

GLUESTOCK, ETC.

Darmstadt Scott & Courtney, Binghampton Victory, Buenos Aires, 396 bls.
J. Gorvers Co., Cape Comfort, Barranquilla, 40 bdls. dry hide cuttings.

CASEIN

Sun International Co., Astri, Buenos Aires, 500 bags casein, 25,000 kilos.
Casein Co. of America, Div. Borden Co., Binghampton Victory, Buenos Aires, 5081 bags ground lactic casein, 254,014 kilos.
Hercules Powder Co., Highland Prince, Buenos Aires, 1000 bags lactic casein.
1st of Boston International Corp., Highland Prince, Buenos Aires, 1000 bags ground lactic casein.

PHILADELPHIA IMPORTS

WEEK ENDING JUNE 8, 1946

Textile & Paper Supply Corp., Binghampton Victory, Buenos Aires, 57 bls. cotton waste.
Philadelphia National Bank, Binghampton Victory, Buenos Aires, 5990 bags granulated bones.
Baugh & Sons Co., Binghampton Victory, Buenos Aires, 1684 bags granulated bones.

ALBANY IMPORTS

WEEK ENDING JUNE 1, 1946

Cellulose Sales Co., Inc., Bearnhard Ingelsson, Soraker, 3168 bls. dry sulphite pulp, 528 tons.
Mead Sales Co., Inc., Bernhard Ingelsson, Soraker, 750 bls. dry sulphite pulp, 150 tons.
Cellulose Sales Co., Inc., Bernhard Ingelsson, Soraker, 4620 bls. kraft sulphate pulp, 770 tons.
Cellulose Sales Co., Inc., Bernhard Ingelsson, Hernosand, 1200 bls. sulphate pulp, 196 tons; 2400 bls. sulphite pulp, 505 tons.
Price & Pierce, Ltd., Bernhard Ingelsson, Wallvik, 250 bls. dry mechanical pulp, 50 tons; 6750 bls. dry sulphate pulp, 1143 tons; 150 bls. dry sulphite pulp, 25 tons.

Poland Slowly Recovers With Production Still Low

WASHINGTON — War-damaged pulp and paper mills of Poland are attempting to attain normal productive levels again, now under Government control. A report just received on the matter states some mills were almost completely destroyed. In the case of such plants, it is reported, plans for rebuilding have been completed, and it is hoped the mill will be producing viscose pulp by 1947-48.

Meanwhile, the report continued, the limited pulp production this year will be all needed by domestic mills, with only about 16,500 to 22,000 short tons of viscose pulp available for other sales. Plans have been drawn for several new mills in western Poland (Pomerania and Silesia) where pine for pulp is found. New mills as well as old will be equipped to make bleached pulps.

Paper mills are said to be in better condition than pulp mills. Out of 44 such mills, 41 are in operation to some extent. There are 36 paper mills in Silesia and Pomerania, giving the country a total of 77 mills capable of varying degrees of operation. By 1947-48, the report added, some 80 mills are expected to be in reasonably efficient production, with an annual output of 550,000 short tons.

Paper production this year is expected to be about 165,000 short tons. Some exports of cement and sugar sacking, glassine, cigarette and special papers are planned for 1947-48.

MISCELLANEOUS MARKETS

Office of the PAPER TRADE JOURNAL,
Wednesday, June 12, 1946.

BLANC FIXE—Market remains active. The pulp is currently quoted at $40 per ton, in barrels, at works; the powder is currently quoted at $60 per ton, f.o.b. works.

BLEACHING POWDER — Demand reported very active. Supply situation is reported favorable although containers are hard to get. Quotations are unchanged. Prices on bleaching powder range from $2.50 to $3.10 per 100 pounds, in drums, car lots, at works.

CASEIN—OPA maximum prices on processed acid-precipitated casein are as follows: 10,000 pounds or more, 33 cents per pound; 2,000 pounds, 33¼ cents per pound; less than 2,000 pounds, 33¾ cents per pound, f.o.b. shipping point. Imported, 33 cents per pound.

CAUSTIC SODA — Demand continues very heavy. Cutback production reduces stocks. Market tight with demand above output. Solid caustic soda is quoted at $2.30 per 100 pounds; flaked and ground is quoted at $2.70 to $2.95 per 100 pounds.

CHINA CLAY—Relatively moderate demand reported. Quotations remain unchanged. Supply good. Domestic filler clay is currently quoted at from $8.50 to $9 per ton; coating clay is quoted at from $12 to $22 per ton, at mine. Imported clay is quoted at from $22 to $25 per long ton, ship side.

CHLORINE—Market tight with inventories lowered and demand strong. Quotations unchanged. Chlorine is currently quoted at $2.00 to $2.25 per 100 pounds, in single unit tank cars, f.o.b. works.

ROSIN—Demand steadily increasing. "G" gum rosin is quoted at $6.74 per 100 pounds, in barrels, at Savannah; "FF" rosin at $6.70 per 100 pounds, in barrels, at New York; seventy percent gum rosin size at $6.95 per 100 pounds, f.o.b. works.

SALT CAKE—Very heavy demand is currently keeping inventories low. Prices remain unchanged. Domestic salt cake is quoted at $15 per ton, in bulk. Chrome salt cake is quoted at $16 per ton. All prices in car lots, f.o.b. shipping point.

SODA ASH—Heavy demand continues for over-all requirements. Market remains tight with demand above output. Orders allocated to equalize distribution. Quotations continue unchanged. Current prices, car lots, per 100 pounds, are as follows: in bulk, $.95; in paper bags, $1.05; and in barrels, $1.35.

STARCH—Demand continues to exceed supplies. Previous orders filled. Starch prices continue unchanged. The pearl grade is quoted at $3.72 per 100 pounds; powdered starch at $3.83 per 100 pounds; all prices in bags; car lots, f.o.b. Chicago.

SULPHATE OF ALUMINA—Demand reported active. Supply situation fair. Quotations continue unchanged. The commercial grades are quoted at from $1.15 to $1.35 per 100 pounds, in bags, car lots, f.o.b. works. The iron free is currently quoted at $1.75 to $2.00 per 100 pounds, in bags, at works.

SULPHUR—Quotations on sulphur continue to conform to prevailing market prices. Demand moderate. Annual contracts are quoted at $16 per long ton, f.o.b. mines; the price at Gulf Ports is $17.50 per long ton.

TALC—Prices on talc continue unchanged. Demand steady. Domestic grades are currently quoted at from $16 to $30 per ton at mines; Canadian at $24 to $30 per ton. All prices in car lots.

MARKET QUOTATIONS

All market quotations, excepting those otherwise designated as official OPA maximum prices, are based on the manufacturers' price level as of October 1-15, 1941; maximum wholesale prices are based on the merchants' maximum prices for stipulated quantities at a quoted price to all customers of a like class, as shown by the merchant's sales records of goods delivered during March, 1942. A merchant's price list in effect in March 1942, showing quotations of actual shipments, will establish the current maximum prices.

Paper

(Delivered New York)

Standard News, per ton—
Roll, contract ..*$67.00 @ —
Sheets ..... 75.00 @ —
* OPA Maximum Price.

Kraft—per cwt.—Carload Quantities
Zone A, Delivered
Superstandard Wrapping .....*$5.25 @ —
No. 1 Wrapping..*5.00 " —
Standard Wrapping*4.75 " —
Standard Bag.....*4.375 " —
* OPA Manufacturers' Prices.

Tissues—Per Ream—Carlots
White No. 1..... 1.12½ " —
White No. 1 M. G. 1.10 " —
White No. 1¼ .... 1.00 " —
White No. 2..... .90 " —
Anti-Tarnish M.F.. 1.20 " —
Colored ..... — " —
Kraft ..... .95 " —
Manila ..... .90 " —

Toilet—1 M. Sheets—Per Case
Unbleached ..... 4.25 " —
Bleached ..... 5.70 " —
Unbl. Toilet, 1 M.. 4.16 " —
Bleached Toilet.... 5.70 " —

Paper Towels, Per Case—
Unbleached, Jr. ... 2.20 " —
Bleached, Jr. ..... 3.20 " —

Manila—per cwt.—C. l. f. a.
No. 1 Jute .....11.25 @ —
No. 1 Manila 35 lb. 6.00 " 7.00

Boards, per ton—
News .....*54.00 @ —
Chip .....*54.00 @ —
Sgl. Mla. Ll. Chip*65.00 @ —
White Pat. Coated*79.00 @ —
Kraft Liners 50 lb.*74.00 " —
Binders Boards ...84.00 " 116.00

* OPA Base Prices per 10 tons. Less than 10 tons but over 3 tons, add $2.50; three tons or less, add $5; regular 35-39 basis, add $5; basis 40-49, add $2.50; basis 91-100, add $2.50; basis 101-120, add $5.

The following are representative of distributors' resale prices:

Rag Content Bonds and Ledgers—White, Assorted Items
Delivered in Zone 1:

	Bonds	Ledgers
100% Rag Ext. No. 1	$39.10@$46.00	$40.25@$47.25
100% Rag	32.20 " 37.75	33.35 " 39.25
85% Rag	.... "	29.90 " 35.00
75% Rag	23.00 " 27.00	24.15 " 28.25
65% Rag	.... "	22.80 " 27.75
50% Rag	18.70 " 22.75	19.90 " 24.25
25% Rag	16.40 " 20.00	17.55 " 21.50

Colors at $1.00 cwt. extra.

Sulphite Bonds and Ledgers—White, Assorted Items
Delivered in Zone 1:

	Bonds	Ledgers
No. 1	$10.55@$12.75	$11.70@$14.25
No. 2	9.65 " 11.75	10.80 " 13.25
No. 3	9.20 " 11.25	10.35 " 12.50
No. 4	8.90 " 10.75	10.05 " 12.25

Colors $1.00 cwt. extra.

Free Sheet Book Papers—White, Cased Paper
Delivered in Zone 1:

No. 1 Glossy Coated...	$13.65@$15.50
No. 2 Glossy Coated...	12.40 " 14.00
No. 3 Glossy Coated...	11.60 " 13.25
No. 4 Glossy Coated...	11.15 " 12.75
No. 1 Antique (watermarked)	10.25 " 11.75
No. 2 Offset	9.60 " 11.00
A Grade E. F.....	9.35 " 10.75
A Grade S. & S. C....	9.60 " 11.00
B Grade E. F.....	8.85 " 10.25
B Grade S. C.....	9.10 " 10.50
C Grade E. F.....	8.55 " 9.75
C Grade S. C.....	8.80 " 10.00
D Grade E. F.....	8.25 " 9.50
D Grade S. & S. C....	8.50 " 9.75

Ivory & India at $.50 cwt. extra.

Wood Pulp

OPA Maximum Prices and Canadian Manufacturers' Prices, Less Freight.
Not Exceeding OPA Allowances.

Bl. Softwood Sulphite.....	$94.00
Unbl. Softwood Sulphite.....	82.00
Bl. Hardwood Sulphite.....	91.50
Unbl. Hardwood Sulphite.....	79.50
Bl. Glassine Sulphite	97.00
Unbl. Glassine Sulphite	86.00
N. Bleached Sulphate.....	94.00
S. Bleached Sulphate.....	88.00
N. Semi-Bleached Sulphate...	89.00
S. Semi-Bleached Sulphate...	83.00
N. Unbl. Sulphate.....	76.00
S. Unbl. Sulphate.....	69.50
Bl. Soda	84.00
Unbl. Soda	80.00
Groundwood	58.00

Transportation Allowances

Applying to Producers of Wet Wood Pulp.

	Below 50% Air Dry Weight
Northeast	$12.50
Lake Central	12.50
Southern	15.00
West Coast (in area)	9.50
West Coast (out area).....	15.50

	50%-80% Air Dry Weight
Northeast	$10.50
Lake Central	10.50
Southern	13.00
West Coast (in area)	8.50
West Coast (out area)	14.50

Applying to Producers of Dry Wood Pulp.

	Above 80% Air Dry Weight
Northeast	$7.50
Lake Central	7.50
Southern	10.00
West Coast (in area)	6.50
West Coast (out area)	12.50

Should freight charges actually exceed these allowances, the difference may be added to the maximum prices.

Domestic Rags

New Rags
(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—		
New White, No. 1.	6.50	@ 7.25*
Silesias No. 1.....	—	" 5.75*
New Unbleached .	6.75	" 7.50*
Blue Overall	—	" 5.50*
Fancy	—	" 3.50*
Washables	—	" 3.00*
Bleached Khaki Cuttings	—	" 4.25*
Unbleached Khaki Cuttings	—	" 3.50*

* OPA Maximum Prices.

Old Rags

White, No. 1—			
Repacked	*3.84	@	—
Miscellaneous	*3.20	"	—
White, No. 2—			
Repacked	*2.90	"	—
Miscellaneous	*2.65	"	—
Thirds and Blues—			
Repacked	*2.20	"	—
Miscellaneous	*1.30	"	—
Roofing Rags—			
No. 1	*1.55	"	—
No. 2	*1.45	"	—
No. 3 (bagging)	*1.25	"	—
No. 4	*1.35	"	—
No. 5A	*1.35	"	—
Old Manila Rope	5.75	"	—

* OPA Maximum Prices.

Foreign Rags

Pre-War Quotations
All Prices Nominal

New Rags

New Dark Cuttings	2.25	@	2.40
New Mixed Cuttings	2.00	"	2.20
New Light Silesias	5.50	"	5.75
Light Flannelettes	5.50	"	5.75
New White Cuttings	7.00	"	7.50
New Light Oxfords	4.00	"	4.50
New Light Prints	3.00	"	3.25

Old Rags

No. 1 White Linens	7.50	"	8.50
No. 2 White Linens	6.50	"	7.50
No. 3 White Linens	4.50	"	—
No. 4 White Linens	2.25	"	3.25
No. 1 White Cottons	4.25	"	4.75
No. 2 White Cottons	3.25	"	3.75
No. 3 White Cottons	2.50	"	3.00
No. 4 White Cottons	1.90	"	2.20
Extra Light Prints	2.00	"	2.40
Ord. Light Prints	1.75	"	2.15
Med. Light Prints	1.55	"	1.95
Dutch Blue Cottons	2.25	"	2.50
French Blue Linens	3.00	"	—
Checks and Blues	2.00	"	—
Linsey Garments	1.90	"	2.00
Dark Cottons	1.50	"	1.60
Old Shopperies	1.30	"	1.45
New Shopperies	1.45	"	1.50
French Blues	2.25	"	2.50

BAGGING

(Prices to Mill, f. o. b. N. Y.)

Gunny No. 1—			
Foreign	Nominal		
Domestic	3.25	@	3.30
Wool Tares, light	3.25	"	3.50
Wool Tares, heavy	3.50	"	3.75
Bright Bagging	3.25	"	3.50
Manila Rope—			
Foreign	—	"	—
Domestic	*5.75	"	—
Jute Threads	5.50	"	—
No. 1 Sisal Strings	*4.00	"	—
Mixed Strings	1.30	"	—

* OPA Maximum Prices.

Old Waste Papers

(F. o. b. New York)

OPA Maximum Prices, Baled

No. 1 Hard White Envelope Cuts, one cut	3.37½	@	—
No. 1 Hard White Envelope Cuts	3.12½	"	—
No. 1 Hard White Shavings, unruled	2.87½	"	—
No. 1 Hard White Shavings, ruled	2.50	"	—
No. 1 Hard White Shavings, one cut	2.87½	"	—
No. 1 Soft White Shavings	2.50	"	—
Soft White Shavings, Misc.	2.15	"	—
No. 1 Fly Leaf Shavings	1.67½	"	—
No. 2 Fly Leaf Shavings	1.12½	"	—
No. 1 Groundwood Fly Leaf Shavings	1.25	"	—
No. 2 Mixed Groundwood Fly Leaf Shavings	.90	"	—
Mixed Colored Shavings	.75	"	—
Mixed Groundwood Colored Shavings	.90	"	—
Overissue Magazines	1.67½	"	—
No. 1 Heavy Books & Magazines	1.92½	"	—
Mixed Books	1.10	"	—
No. 1 White Ledger	2.30	"	—
No. 2 Mixed Ledger, colored	2.00	"	—
New Manila Envelope Cuttings, one cut	2.87½	"	—
New Manila Envelope Cuttings	2.65	"	—
Extra Manilas	1.95	"	—
Mixed Kraft, Env. & Bag Cuttings	2.75	"	—
Kraft Envelope Cuttings	3.25	"	—
Triple Sorted, No. 1 Brown Soft Kraft	2.50	"	—
New 100% Kraft Corrugated Cuttings	2.25	"	—
No. 1 Assorted Old Kraft	1.75	"	—
New Jute Corrugated Cuttings	.90	"	—
Old 100% Kraft Corrugated Containers	1.75	"	—
Old Corrugated Containers	1.40	"	—
Box Board Cuttings	.72½	"	—
White Blank News	1.65	"	—
Overissue News	1.10	"	—
No. 1 News	1.00	"	—
No. 1 Mixed Paper	.95	"	—
Old Corrugated Containers	.82½	"	—
Mill Wrappers	1.10	"	—

Twines

All Prices Nominal
(F. o. b. Mill)
(Soft Fiber)

Coarse Polished—			
India	.21	@	—
White Hemp	.21	"	—
Fine Polished—			
Fine India	.26	"	—
Unpolished—			
Box	.17¼	"	—
Paper Makers	.17	"	—
Tube Rope	.19	"	—
Wall Paper	.20½	"	—
Wrapping	.23	"	—
Soft Fiber Rope	.19	"	—
Cotton	.25	"	—

(Hard Fiber)

Medium Java	.18	"	—
Mex. Sisal	.16	"	—
Manila	—	"	—

PHILADELPHIA

Domestic Rags (New)

(Price to Mill)

Shirt Cuttings—	
New White No. 1	.07¼
New White No. 2	.05¾
Light Silesias	.05¾
Black Silesias, soft	.03¾
New Unbleached	.07½
Washable Prints	.04¾
Washable No. 1	.03
Blue Overall	.05½
Cottons—According to grades—	
Washable Shredding	.01¾
Fancy Percales	.04¾
New Black Soft	.03¼
Khaki Cuttings—	
Unbleachable Cotton Cuttings	.03½
Bleachable Cotton Cuttings	.04½
Men's Corduroy	.03½
Ladies' Corduroy	.03
Cottonades	.03¼

Domestic Rags (Old)

White No. 1—Repacked	3.80	@	—
Miscellaneous No. 1	3.20	"	—
Miscellaneous No. 2	2.65	"	—
White No. 2—Repacked	2.90	"	—
Thirds and Blues—			
Miscellaneous	1.80	"	—
Repacked	2.20	"	—
Black Stockings—			
(Export)	Nominal		
Roofing Stock—			
Foreign No. 1	Nominal		
Domestic No. 1	1.55	"	—
Domestic No. 2	1.45	"	—
Roofing Bagging	1.35	"	—
Old Manila Rope	5.75	"	—

Bagging

(F. o. b. Phila.)

Gunny No. 1—			
Foreign	Nominal		
Domestic	3.00	@	3.50
No. 1 Clean Bright— Sisal Strings	.04	"	—
No. 2 Clean Bright— Sisal Strings	.03	"	—
Sisal Jute	.02½	"	.02¾
Scrap—			
No. 1	3.25	"	3.50
No. 2	1.75	"	1.80
Wool Tares, heavy	4.00	"	4.25
No. 1 New Light Burlap	3.00	"	4.00
New Burlap Cuttings	3.75	"	4.00

Old Papers

(F. o. b. Phila.)

OPA Maximum Prices, Baled

No. 1 Hard White Envelope Cuts, one cut	3.37½	@	—
No. 1 Hard White Shavings, unruled	2.87½	"	—
Soft White Shavings, one cut	2.50	"	—
White Blank News	1.65	"	—
Soft White Shavings, Misc.	2.15	"	—
No. 1 Fly Leaf Shavings	1.67½	"	—
No. 2 Fly Leaf Shavings	1.12½	"	—
No. 1 Groundwood Fly Leaf Shavings	1.25	"	—
No. 2 Groundwood Fly Leaf Shavings	.90	"	—
Mixed Colored Shavings	.75	"	—
New Manila Envelope Cuts, one cut	2.87½	"	—
Hard White Envelope Cuts, one cut	3.37½	"	—
Triple Sorted No. 1 Brown Soft Kraft	2.50	"	—
Mixed Kraft Env. & Bag Cuttings	2.75	"	—
Kraft Envelope Cuttings	3.25	"	—
No. 1 Heavy Books & Magazines	1.92½	"	—
New Manila Envelope Cuts, one cut	2.87½	"	—
New Manila Envelope Cuttings	2.65	"	—
White and Colored Tabulating Cards	2.25	"	—
Ground Wood Tabulating Cards	1.35	"	—
White Blank News	1.65	"	—
No. 1 Assorted Old Kraft	1.75	"	—
No. 1 Mixed Paper	.95	"	—
Overissue News	1.10	"	—
Box Board Cuttings	.72½	"	—
New Corrugated Cuttings, Kraft	2.25	"	—
Old 100% Kraft Corrugated Containers	1.75	"	—
Old Corrugated Containers	1.40	"	—
Jute Corrugated Cuttings	1.07½	"	—

Bagging

(F. o. b. Boston)

Gunny Bagging—			
Foreign	(nominal)		
Domestic	2.75	@	2.90
Sisal Rope No. 1	*4.75	"	—
Sisal Rope No. 2	* —	"	4.00
Mixed Rope	1.60	"	—
Transmission Rope—			
Foreign	(nominal)		
Domestic	2.75	"	3.00
Manila Rope—			
Foreign	(nominal)		
Domestic	5.75	"	—
Soft Jute Rope	4.50	"	5.00
Jute Carpet Threads	3.00	"	3.50
Bleachery Burlap	8.50	"	9.00
Scrap Burlap—			
Foreign	(nominal)		
Domestic	3.00	"	3.25
South America	—	"	3.25

BOSTON

Old Papers

(F. o. b. Boston)

OPA Maximum Prices, Baled

No. 1 Hard White Shavings, unruled	2.87½	@	—
No. 1 Hard White Shavings, ruled	2.50	"	—
Soft White Shavings, Misc.	2.15	"	—
No. 1 Fly Leaf Shavings	1.67½	"	—
No. 2 Fly Leaf Shavings	1.12½	"	—
No. 1 Groundwood Fly Leaf Shavings	1.25	"	—
No. 2 Groundwood Fly Leaf Shavings	.90	"	—
Mixed Colored Shavings	.75	"	—
New Manila Envelope Cuts, one cut	2.87½	"	—
Hard White Envelope Cuts, one cut	3.37½	"	—
Triple Sorted No. 1 Brown Soft Kraft	2.50	"	—
Mixed Kraft Env. & Bag Cuttings	2.75	"	—
Kraft Envelope Cuttings	3.25	"	—
No. 1 Heavy Books & Magazines	1.92½	"	—
New Manila Envelope Cuts, one cut	2.87½	"	—
New Manila Envelope Cuttings	2.65	"	—
White and Colored Tabulating Cards	2.25	"	—
Ground Wood Tabulating Cards	1.35	"	—
White Blank News	1.65	"	—
No. 1 Assorted Old Kraft	1.75	"	—
No. 1 Mixed Paper	.95	"	—
Overissue News	1.10	"	—
Box Board Cuttings	.72½	"	—
New Corrugated Cuttings, Kraft	2.25	"	—
Old 100% Kraft Corrugated Containers	1.75	"	—
Old Corrugated Containers	1.40	"	—
Jute Corrugated Cuttings	1.07½	"	—

Bagging

(F. o. b. Boston)

Gunny Bagging—			
Foreign	(nominal)		
Domestic	2.75	@	2.90
Sisal Rope No. 1	*4.75	"	—
Sisal Rope No. 2	* —	"	4.00
Mixed Rope	1.60	"	—
Transmission Rope—			
Foreign	(nominal)		
Domestic	2.75	"	3.00
Manila Rope—			
Foreign	(nominal)		
Domestic	5.75	"	—
Soft Jute Rope	4.50	"	5.00
Jute Carpet Threads	3.00	"	3.50
Bleachery Burlap	8.50	"	9.00
Scrap Burlap—			
Foreign	(nominal)		
Domestic	3.00	"	3.25
South America	—	"	3.25
Wool Tares—			
Foreign	(nominal)		
Domestic	4.25	"	—
Aust. Wool Pouches	—	"	3.65
New Zealand Wool Pouches	—	"	3.50
New Burlap Cuttings	4.75	"	5.00
Heavy Baling Bagging	4.00	"	4.25
Paper Mill Bagging	2.50	"	3.00
No. 2 Roofing Bagging	1.35	"	—

* OPA Maximum Prices.

Domestic Rags (New)

(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints	.04½	@	.04¾
Fancy Percales	.04¼	"	.05
New White No. 1	.06¾	"	.07
New Light Flannelettes	.05½	"	.06
Canton Flannels, Bleached	.06	"	.06¼
Underwear Cutters, Bleached	.06¼	"	.06¼
Underwear Cutters, Unbleached	.05¾	"	.06
Silesias No. 1	.06	"	.06¼
New Black Silesias	.03	"	.03¼
Red Cotton Cuttings	.03½	"	.04
Soft Unbleached	.06½	"	.06¾
Blue Cheviots	.05½	"	.06
Fancy	.02¼	"	—
Washable	.02½	"	—
Khaki Cuttings	.02½	"	.03
O. D. Khaki	.03½	"	.03¾
Corduroy	.03½	"	.05¼
New Canvas	.06¼	"	.06½
B. V. D. Cuttings	.06¼	"	.06¾

Domestic Rags (Old)

(F. o. b. Boston)

White No. 1—			
Repacked	3.80	@	—*
Miscellaneous	3.20	"	—*
White No. 2—			
Miscellaneous	2.65	"	—*
Twos and Blues, Repacked	2.20	"	—*
Old Blue Overalls	2.25	"	2.50
Thirds and Blues, Repacked	2.20	"	—*
Miscellaneous	1.80	"	—*
Black Stockings	3.50	"	4.00
Roofing Stock—			
No. 1	1.55	"	—*
No. 2	1.45	"	—*
No. 3	1.35	"	—*
No. 4	1.35	"	—*
No. 5, Quality A	1.85	"	—*
Quality B	1.80	"	—*
Quality C	.95	"	—*
Old Manila Rope	5.75	"	—*

* OPA Maximum Prices.

Foreign Rags

(F. o. b. Boston)

Canvas	(nominal)
Dark Cottons	(nominal)
Dutch Blues	(nominal)
New Checks and Blues	(nominal)
Old Fustians	(nominal)
Old Linsey Garments	(nominal)
New Silesias	(nominal)
Misc.	2.15 " —
No. 1 White Ledger	2.30 " —
No. 2 Ledger, colored	2.00 " —
No. 1 Heavy Books & Magazines	1.92½ " —
Overissue Magazines	1.67½ " —
New Manila Envelope Cuttings	2.65 " —
No. 1 Assorted Old Kraft	1.75 " —
No. 1 Mixed Paper	.95 " —
Box Board Cuttings	.72½ " —
Kraft Corrugated Cuttings	2.25 " —
Old Corrugated Containers	1.40 " —
Overissue News	1.00 " —
No. 1 News	1.00 " —

CHICAGO

Waste Paper

(F. o. b. Chicago)

OPA Maximum Prices, Baled

Shavings—			
No. 1 Hard White Envelope Cuts, one cut	3.37½	@	—
No. 1 Hard White Shavings, unruled	2.87½	"	—
No. 1 Soft White Shavings	2.50	"	—
No. 1 White Ledger	2.30	"	—
No. 1 Heavy Books & Magazines	1.92½	"	—
White Blank News	1.65	"	—
Mixed Kraft Env. & Bag Cuttings	2.75	"	—
No. 1 Assorted Old Kraft	1.75	"	—
Overissue News	1.10	"	—
No. 1 News	1.00	"	—
No. 1 Mixed Paper	.95	"	—
No. 1 Roofing Rags	1.55	"	—
No. 1 Roofing Bags	1.45	"	—